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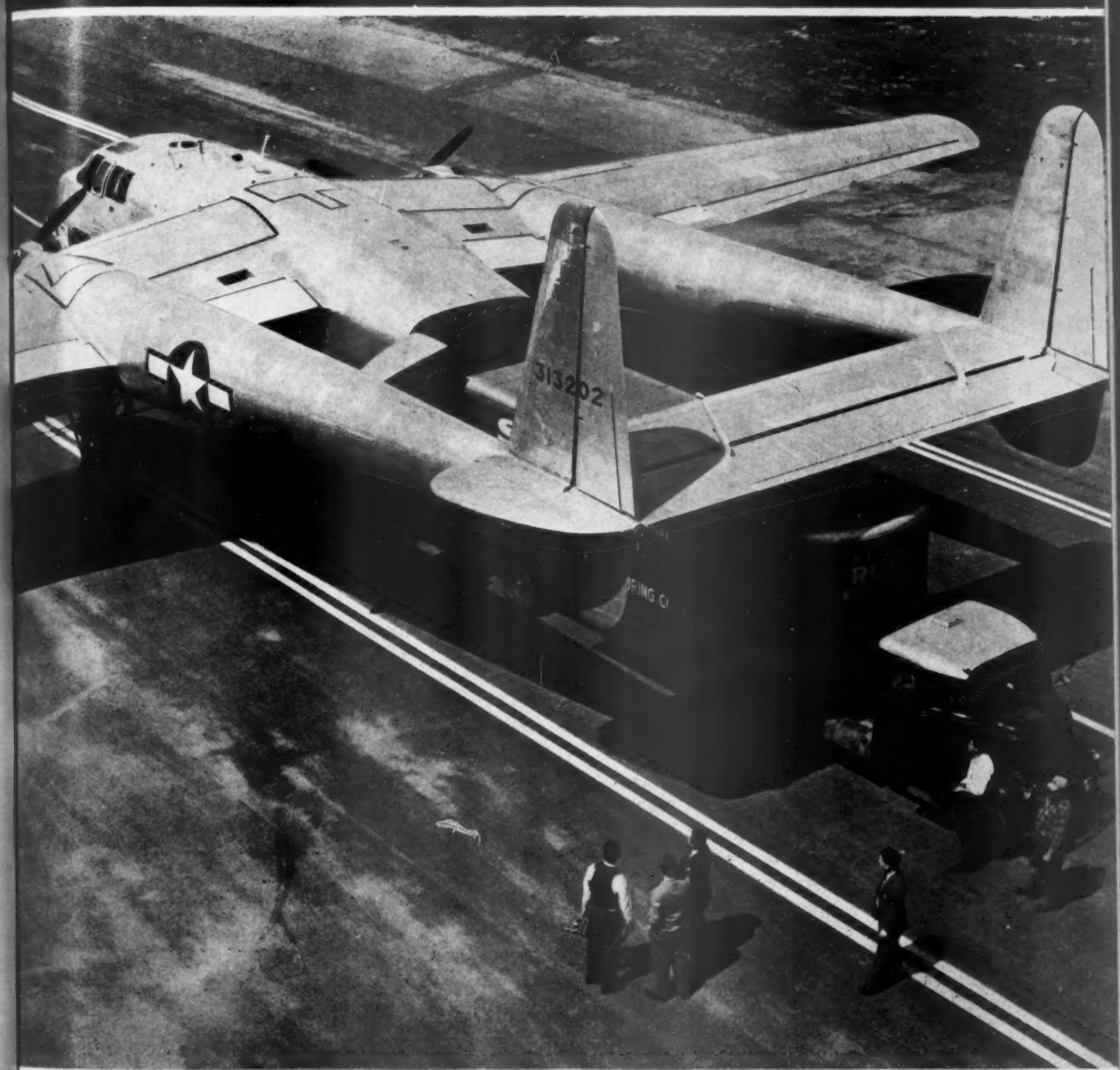
PULP & PAPER INDUSTRY

Vol. 19 OCTOBER, 1945 No. 10



lying paper

his Fairchild "Flying Box-Car" carries 9 tons of paper at 200 MPH. . . . opens new orizons for paper and printing industries . . .

usta Paper Corp., Plegah Forest, N. C., foresees air cargoes of its 7½ to 13 lb. air ail and Bible paper made from American seed flax (process developed by Brothers Harry d late Fritz Straus.)

SERVING THE INDUSTRIES OF THE WEST

Penn Salt Chemicals

help produce the BAG and the APPLES!

THIS simple picture illustrates Penn Salt's wide service to Western industries.

The paper that made the bag was produced by the Western paper industry, aided by Penn Salt's Liquid Chlorine and Caustic Soda. And the apples were guarded, during growth, against the ravages of codling moths by Kryocide—Penn Salt's Natural Cryolite insecticide from Greenland.

In agriculture and industry—and especially in the pulp and paper field—Penn Salt products are helping to create and to improve a large variety of fine products that are coming from the West.

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Chemicals

TACOMA, WASHINGTON

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for the Pulp and Paper Industries

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Perchloron* • Sodium Chlorate
Potassium Chlorate • Sodium Arsenite
Sodium Hypochlorite • Hydrogen

*Trade-mark Reg. U. S. Pat. Off.

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HAIL AND FAREWELL

Editorials

DURING this past month shutters have been going up on wartime government offices. Most of the executives who are going back to private industry are mighty glad to be leaving Washington. The pulp and paper industry as a whole, is also pleased by the trend of affairs and also glad to have some of its best men back in their permanent offices.

A note in the record of evolution—the new Veteran's Bureau takes over Temporary D Building on Independence Avenue, where the WPB Paper Division held forth. . . . What's left of the latter group moves across the street and in with the Forest Products Bureau in Railroad Retirement Building. . . . Farewell parties are held in many agencies. . . . Industry executives go back to the jobs they like best. . . . The army of secretaries go home to marry, or get new jobs. . . . Honor scrolls are awarded to industry men who gave their time and talents to the war effort.

Many of these were well deserved, especially in the paper and paperboard industry units of WPB where a conscientious job was done by many men who had the welfare of industry sincerely at heart.

And a fact which PULP & PAPER INDUSTRY was informed about many months ago may now be disclosed. It is this:

Forest Products Bureau and Paper and Paperboard Division men in WPB long ago had a plan on file for their dissolution as an agency when the war ended and no one was more anxious to put it in effect than they were.

But now an AP dispatch confirms a Washington development which was reported in the columns of this magazine as long ago as our issue of last February. That is, that Secretary of Commerce Wallace did then hope, and still hopes, to carry on a peace-time model of the WPB under his direction. It remains to be seen what WPB functions he can keep alive.

WHAT BOOK PUBLISHERS WANT

MANY of the wartime lessons learned in conservation of paper will—and should—be continued after the war. Even with the end of the war, fiber will continue to be comparatively more scarce than it has been in the past. But technologists in this industry already are finding many ways to extend fiber and produce even a better quality paper.

Book publishers are hopeful that the postwar book will be more closely related to the present wartime size than to the prewar "bulking book," Edward H. Dodd, Jr., editor of Dodd, Mead & Co., New York publishers, told a representative of PULP & PAPER INDUSTRY this month.

While not purporting to speak for publishers generally, Mr. Dodd pointed out that the Publishers Bureau has made a survey of its membership and the great majority were for staying with manufacturing processes taught by the war.

Before the war it was sometimes the custom to "bulk up" short novels. In a recent advertisement discussing the problem, Henry Holt & Co., another old line New York concern, concluded: "Sooner or later an author is going to write a novella and a publisher is going to want to make it look like a novel . . . booksellers will begin to tell publishers' salesmen again 'to make a real package out of your merchandise'."

But at least in the initial postwar years, publishers say, they'll try for thin papers, and condensed typesetting practices on big manuscripts. The paper industry, more mindful than ever of conservation and the long, long pull, will cooperate as always.

Quality, more than quantity, is going to be the "watchword" of the paper industry.

VERTREES YOUNG, Executive Vice President, Pulp & Paper Division, Gaylord Container Corp., Bogalusa, La., the host mill at meeting of the American Pulp & Paper Mill Supts. Assn., Southern Division, in that city on Nov. 1 and 2.

Two Meetings Set In Southern U. S.

After an entire year of staying at home and on the job, organization industry meetings are again resuming in the South during the next month with two Superintendents' meetings scheduled.

The Southeastern Division of the American Pulp & Paper Mill Superintendents' Association will meet October 26 and 27 at the Virginia Hotel, Lynchburg, Va.

The Southern Division of the APPMSA will meet November 1 and 2 at Bogalusa, La.

The Pacific Coast Division, unable to hold any of its meetings except the joint session with TAPPI since the war began, also is be-stirring itself to activity again. This Division held its own last meeting in Longview, Wash., on the night before the Japs struck at Pearl Harbor.

Frank Hamilton Is Fatally Injured

Frank J. Hamilton, sulphite superintendent of Powell River Co., died in Vancouver, B. C., General Hospital as a result of injuries suffered by scalding when a blow pipe was choked by dry pulp as one of the digesters at the mill was being blown. He was buried at the Powell River cemetery.

Mr. Hamilton went to Powell River from Port Alice, where he had been engaged by British Columbia Pulp & Paper Co., and he was in charge of sulphite operations throughout his association with Powell River Co. A native of Belfast, Ireland, he was 42 and is survived by his widow and two children.

He entered the industry through the research department of International Paper Co. Prior to the war he worked in Poland during construction of a large paper mill near Gdynia. He returned to Canada in 1939 and went to Port Alice, B. C.

Resins Panel Will Be Held By TAPPI in Seattle Dec. 4

Continuing its new enlarged idea of combining afternoon round table discussions with evening dinner meetings, the Pacific Section of TAPPI will hold its second such gathering on Tuesday, Dec. 4, at the University of Washington, Seattle, Wash.

Dr. H. V. Tartar of the Department of Chemistry at the University will organize and lead a panel discussion on "A Survey of the Applications of Synthetic Resins to the Pulp & Paper Industry." Leaders in the west in this field in mills and with chemical companies will participate.

The meeting will begin at 3 p. m. in the Chemistry Building on the campus. A dinner and social gathering will follow at 6:30 at the Meany Hotel.

WATCH FOR NOVEMBER ISSUE!

The first TAPPI meeting held in the Far West this year took place at Camas, Wash., on October 9. A complete report will be published in our November issue.

A round table discussion, in which a number of outstanding research and technical executives from various mills and educational institutions participated, was held on the subject:

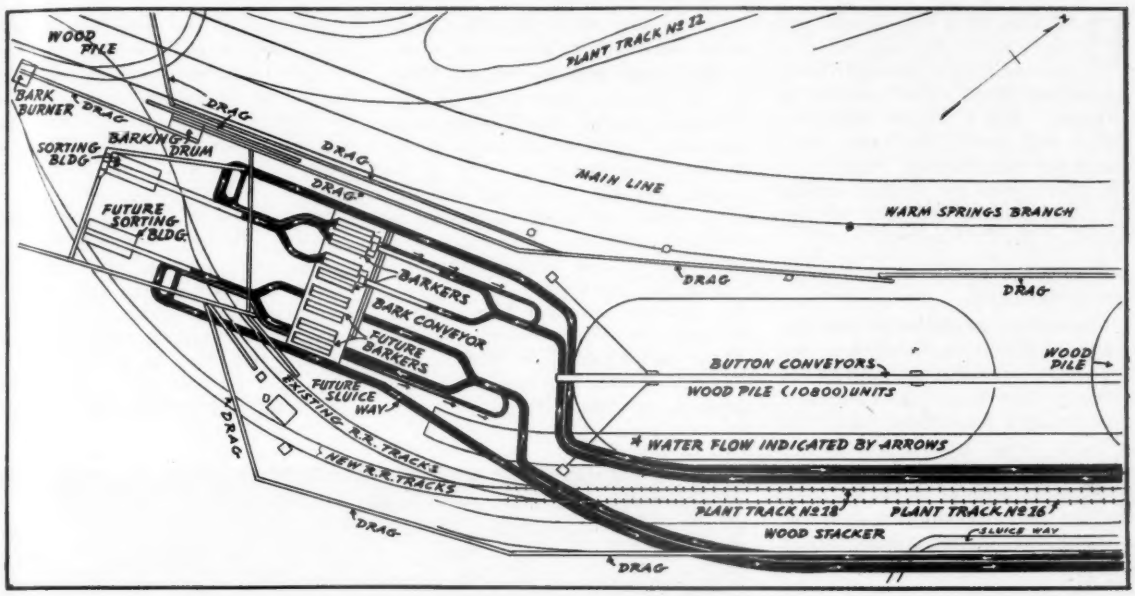
"The Utilization and Disposal of Waste Sulphite Liquor Including By-Product Manufacture."

HOSTS AND PRINCIPAL PARTICIPANTS in the renewal of Southern industry meetings this fall — the Superintendents' two-day conclave Nov. 1 and 2 at Bogalusa, La.

Upper row (left to right): ALFRED SUTER, Gen. Supt., Pulp & Paper Mill, Gaylord Container Corp., Bogalusa; EMILE A. HAARALA, Tour Foreman at same mill, and E. A. NEWMAN, Paper Mill Supt., Crossett Paper Mills, Crossett, Ark., who is Second Vice Chairman of Southern Division, Am. Pulp & Paper Mill Supts. Assn.

Lower row (left to right): J. M. MURRAY, Superintendent of the Gaylord mill and Chairman of Supts.' Southern Division; D. M. WADSWORTH, Asst. Supt., the Gaylord mill, and Secretary-Treasurer of the Southern Division, and CARLEY SMITH, Tour Boss of the Gaylord pulp mill.

West Virginia Pulp & Paper Co. Engineers Design Water Conveyors to Handle Pulpwood



ABOVE IS DIAGRAM OF NEW SYSTEM OF SLUICEWAYS WHICH ENGINEERS OF WEST VIRGINIA PULP & PAPER CO. HAVE DESIGNED for handling incoming pulpwood at their Covington, Virginia, plant. They indicate that the system will greatly simplify and make less expensive the difficult job of handling pulpwood.

The sluiceways replace existing mechanical facilities which are subject to heavy maintenance cost, the company points out. As will be seen above the pulpwood from incoming cars to storage and thence to the mill, or directly to the mill from the incoming cars. Rust Engineering Co., Pittsburg, Pa., are the contractors on the job. The same firm has designed a building for warehousing a company by-product, and will begin demolishing work soon on several chimneys. Estimated cost of the modernization program is in excess of $500,000.

Five-foot wood is handled by the Covington sluiceways. Directions of water flow in the sluiceways are shown by arrows. The drags shown in the drawing are mechanical conveyors.

It is interesting to note that almost simultaneously two important companies in the industry at opposite ends of the United States—the West Virginia Pulp & Paper Co. and the Longview Fibre Co.—have developed independently new and original system of water-conveying of small wood.

The water-conveyor system installed at Longview Fibre Co. —first of its kind in the west and opening up an economic method of handling farmer wood in that region for the first time—was described, with pictures, in the August, 1945, issue of PULP & PAPER INDUSTRY (page 54).

Nicholson Directs Union Bag Manufacturing

G. W. E. Nicholson, resident manager of the Savannah, Ga., plant of Union Bag and Paper Corp. for the past four years, and first vice president of TAPPI, has been promoted to manager of mills and factories of the company, with headquarters in New York.

Alexander Calder, president of Union Bag and Paper Corp., said as of Oct. 1, Mr. Nicholson would be in charge of the manufacturing operation at both Savannah and Hudson Falls, N. Y., where there is a large bag factory, a laminating unit, a research division for product development, and a unit for developing bag-making machinery.

T. T. Dunn, manager of the Pulp and Paper Division of the Savannah plant, succeeds Mr. Nicholson as resident manager at Savannah. Mr. Dunn came to Savannah in 1940 from Bogalusa, La., where he was chief engineer of a paper mill.

Mr. Nicholson joined Union Bag in 1941, and with the exception of a few months, served as resident manager of the Savannah plant, largest integrated pulp and paper mill and bag factory in the world.

Commenting on Mr. Nicholson's appointment, Mr. Calder said:

"We are aware of the splendid job done by Mr. Nicholson in his capacity as resident manager of our Savannah plant, particularly during the trying war period when our production of vital products was substantially increased despite a diminishing and unstable labor supply and the difficulties of obtaining maintenance and manufacturing materials."

G. W. E. NICHOLSON, who has been promoted from Resident Manager of Union Bag's big Savannah mill to Manager of Mills and Factories, with supervision over both the Savannah and Hudson Falls, N. Y., operations. His headquarters will be in New York. T. T. Dunn succeeds him at Savannah.

Melamine Resins--Their Peace

Application of New York Mills

BACK in 1834 the chemist Justus von Liebig succeeded in synthesizing a nitrogen compound which he found merely interesting. But it seemed difficult to make, and costly, and von Liebig could see no practical value in it. He placed it on the shelf of chemistry's "curiosities" and there it stood for more than a hundred years.

It was melamine — a nitrogen compound.

Meanwhile, as melamine stood on the shelf, there was founded in 1907 a company for the purpose of developing an American process to take nitrogen from the air and "fix" it in a form suitable for use as plant food. This was American Cyanamid, taking its name from the fact that it is the first manufacturer in the western hemisphere of calcium cyanamide. Initially this calcium cyanamide was solely a fertilizer but through research and application of that research there have been developed a wide variety of chemicals for industry. Among these is the melamine which is the newest and, in many ways, the most interesting.

Just as the first fission of the atom left intact the huge problem of practical application, so did the re-discovery of the use of melamine leave yet to be solved the problem of producing it on a commercial scale, of getting it from test tube quantities into carload lots. Free cyanamide, obtained readily from calcium cyanamide, was the obvious starting point—and American Cyanamid was the country's sole source of cyanamide. Therefore, the company set out to develop a process that would be both technically perfect and economically practical. It was not an easy job. In getting from cyanamide to melamine the molecule grows in both size and complexity. But in 1939 the difficulties had been ironed out in pilot plants. The manufacture of melamine was on—and none too soon, either. December 7, 1941, was not far away, and melamine was destined to be of prime importance to a great number of war industries.

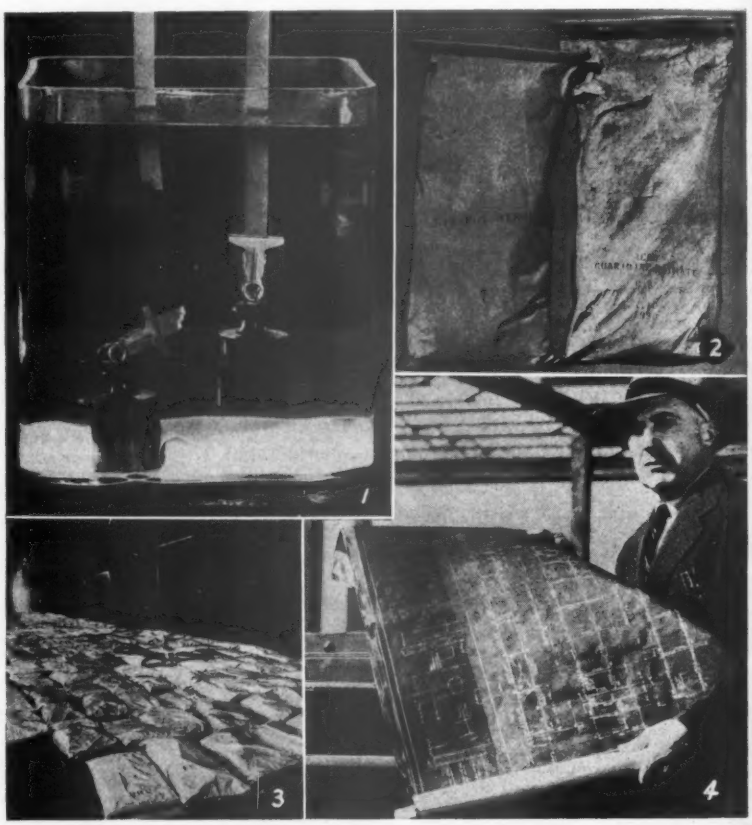
This much is quickly written and as quickly read, and neither the writing nor the reading fairly indicates the great research and the terrific pressure involved. But melamine was ready to go to war.

Melamine and the Potato Bug

The summer after Pearl Harbor a farmer named Joe Thurston was standing on the front porch of his Idaho farm house, a letter in his hand. He was mad clear through. The letter informed him in the dryly ambiguous phraseology of government that burlap bags were scarce and he should try shipping his potatoes in paper bags! That, thought Mr. Thurston, was just like those damned fools in Washington. A paper potato bag would last just long enough to get it wet.

But true to the prophecy of the letter, there were no burlap bags for farmer Thurston that summer, and he had to try paper bags. He got the surprise of his life. Something mighty strange had happened to the paper the bag was made from, Joe figured. It got plenty wet, yet it held a hundred pounds of spuds just the same, just as well as burlap.

And over on the other side of the world another man was getting a surprise. He was built about like Joe, and was just as impatient, but he wore two stars on his shoulders. Like Joe, he was mad, too. His jeep had just overturned in four



ILLUSTRATING THE USE OF MELAMINE RESINS IN WET STRENGTH PAPERS:

1. The weight tensile test. Both papers have identical weights attached to submerged ends. Unbroken paper strip at right in jar is sample of stock impregnated with melamine resin. It held weight after several days suspension in water, while the other broke 3 minutes after submersion.

2. Strong and tough paper bags.

3. Wet strength bags being subjected to water test.

4. Blueprints strengthened with Parez 607.

Time Uses and Future Prospects

Experiences of Pacific Coast Mills

feet of black mud and not only was his temper ruined but also, apparently, some important artillery maps. He saw an orderly washing mud off these maps with gasoline and the air went blue around the general for a hundred yards. After a moment or two his aide got him quieted. "But, General, those maps are on special map paper, Sir. The gasoline won't hurt them — and neither will the moisture from the mud. Look here, sir." The aide wiped a spot dry and then marked on the renewed surface with a pencil."

"I will," said the general, "be damned!"

The farmer and the general were seeing what melamine had done for the paper industry, and thus for two important factors in getting on with the war. But melamine wasn't stopping with the farmer and the general. The shipbuilder was getting blueprints that could be handled in all kinds of weather and handled hard. The maker of important war machinery parts was getting tags that would direct his precious product without damage to the South Pacific, the Aleutians, or across the Atlantic.

With every war use, almost, a peace-time use was indicated. But for a while it could be no more than indicated. Without half trying, Cyanamid officials can name more than a hundred and fifteen suggested uses for wet strength papers made with melamine. These include grocery and shopping bags, heavy-duty multi-wall shipping bags, facial tissues, plain or laminated liners for barrels and crates, shipping labels or tags, and boxes and bags which will resist "wet scuff." But here is a more complete list:

Abrasive papers
Adhesive tapes
Advertising posters
Air-mail paper
Art paper and board
Artificial leather
Aseptic paper
Asphalt papers
Autotype papers
Bag papers
Bank note papers
Barrel liners
Bed sheet pillow case
Bible papers
Blueprint paper
Brown print paper
Book papers (special)
Bottle cap board
Bottle wrappers
Box cover paper
Box liners
Box stay tape
Box boards (spec.)
Butchers wrap
Butter wrap
Button board
Cable paper
Can board
Car liner
Carbon paper
Carpet tissue
Cartridge paper
Catalogue binder
Celery bleaching paper
Chair seat board
Chart paper
Cheese wrapper
Chili wrapper
Cigarette paper
Coal wrap and bags
Combination board
Concrete-curing paper
Container board
Core board
Corrugated board
Counter board
Cover paper
Crate liner
Crib sheets
Decalcomania paper
Deed paper
Delicatessen paper
Die-wiping paper
Diploma parchment
Dishrag paper
Dynamite shell paper
Embossing paper
Envelope (special)
Facial tissue
Filter paper
Fish wrapper
Florist parchment
Flour sack
Frozen food wrappers
Fruit bag paper
Gasket paper
Glassine paper
Glycerine paper
Gummed tape
Hanging paper
Heeling board
Holland cloth substitutes
Ice cream brick wrapper
Index board
Innersole board
Jacquard board
Label paper
Laminated paper
Laundry Blue paper
Leatherboard
Lens tissue
Lithographic paper
Map paper
Masking tape
Matrix paper
Meat wrapper
Milk bottle hood
Mulch paper
Music manuscript
Music-Roll paper
Obstetrical sheet
Onionskin paper
Oyster-pail board
Photographic papers
Potato sack
Pleating paper
Plywood overlays
Poultry-bag paper
Sanitary tissues
Saturating papers
Seed-bag paper
Seed-germinating paper
Shoe cover paper
Shopping bags
Steak interleaving paper
Stencil tissue
Sugar bag
Tag stock
Tanning paper
Tea-Bag paper
Test liners
Tire wrap
Toweling
Tracing paper
Tree-wrap paper
Twisting paper
Veneer paper
Wiping rag substitute

Since PULP & PAPER INDUSTRY was first to publish "Use of Melamine Resins for Beater Wet Strength" by Charles S. Maxwell of the Stamford Research Laboratories of Cyanamid, there have been many technical articles appearing on the subject. There will be many more in the immediate months to come, most of them primarily directed at the chemist. The purpose of this article is a general discussion of the practical applications of melamine for mill management. For the use of wet strength paper resins has implications far beyond the laboratory of a mill. It concerns the conservation of raw materials, for one thing, and it reaches into sales and post-war markets in a very real way.

Parez and Its "Secret"

Parez 607 is the trademarked registered name which Cyanamid has given to its melamine resin for the paper industry. If it has a secret, it is its ability to attach itself to the pulp and be retained in the fibers when the pulp is formed into sheets. Of interest to the industry these days was the fact that its preparation and application involves no change in normal papermaking procedure and no additions to mill equipment. The resin simply binds the fibers and causes them to resist separation when wet. They stand up when fibers of ordinary paper would disintegrate.

There are improvements in dry strength and scuff resistance, and in folding endurance. Because of this it is often possible to make lightweight papers do the work of heavier grades, and with only small amounts of the melamine compound.

It may be misleading to heavily emphasize the effect of Parez on the wet strength of paper. In some cases, the increase in dry strength may be even more important than the wet characteristics.

When Parez is added to paper stock just as it is about to enter the forming part of the paper machine, a perceptible slowing of the stock is noted, and as the paper comes off the machine it will be found to have a somewhat higher densometer test and substantially higher burst and tensile strength values. Most papers exhibit a pronounced increase in folding endurance. Of course, this refers to tests made on the dry paper. This property of the resin may be taken advantage of in a number of ways—stock preparation may be curtailed; less expensive stock may be used; and sometimes the basis weight may be lowered.

A dividend is paid by the resin in the form of improved sizing of rosin-sized papers. This is appreciated particularly in the manufacture of papers that undergo severe exposure to wet conditions, or in the production of lightweight papers that are difficult to size to a high degree.

Saving Pulp

The war brought home heavily

to the U. S. the preciousness of pulpwood and the importance of melamine in this connection was illustrated back in February by an incident in Washington's WPB office. An application for 15,000 pounds of Parez from the A. P. W. Products Co., Albany, N. Y., was under consideration. The mill had a small inventory of melamine and 7500 pounds were on the way already. At that time resins were being tightly allocated (this is no longer the case) but WPB approved the order. Wet strength paper towels for war industries was a big reason, but an important and probably the deciding factor on this policy was that the use of the resin meant a substantial saving of pulp.

From the fibrous material then available, melamine allowed A.P.W. to furnish a greater volume than would otherwise have been possible under the requirements asked by the armed forces and war industries. According to the management of this mill, A.P.W. is viewing postwar markets in the light of their wartime experiences, and they expect new advances in wet strength paper toweling and allied products.

Louis Dejonge & Co., Staten Island, N. Y., has been doing a considerable amount of work on coatings of wet strength stock, according to H. B. Conklin, president and general manager. Mr. Conklin and his associates have been considering the possibilities of having all the stock used by Dejonge contain a certain percentage of wet strength material. A number of their raw-stock suppliers are now using melamine and the balance have not up until now been able to get into the development work due to war conditions.

Coast Mills' Experience

Three of the big Pacific Northwest mills have been important users of melamine resins in containers, multi-wall bags, wiping tissue, map or chart paper and some tabulating paper.

One of the promising developments in the west is in paper or pulp overlays for plywood which have been adopted by several of the biggest plywood producers. As big peeler logs become more scarce, the plywood industry is paying more attention to the strength and surface advantages of treated paper or pulp overlays for lesser quality wood—in fact the use has become widely adopted already. Melamine resins in these overlays, states one of the leaders of the plywood industry, offer a product with decorative possibilities, giving fine colors, and an abrasion resistance and chemical barrier the equal of phenolics. There is more fire resistance than offered in phenolics, he said. Impregnation is recommended at 25-30 per cent by this company's experts but there are many new ideas developing along this line in plywood-paper or paperboard production.

The outer ply of a multi-wall bag runs to one-half per cent melamine resin, as applied at one big mill visited by PULP & PAPER INDUSTRY, the resin being metered into the stock just ahead of the paper machine. It could be introduced before the beaters and at any point from there on, but this mill's management considers its method the handiest for its purposes.

Melamines create a lintless paper with increased rub resistance, either wet or dry, for wiping tissue as made at this mill. Lint had heretofore been a troublesome factor in this product.

The melamines make a stronger product, a mill executive said, so that lighter weight paper does a better job than the heavier paper. In short, it makes less wood do more work. Although the saving in wood in pulp manufacture may not be large, any saving from now on is going to be considered important in the industry.

The one-half of one per cent broke from the wiping tissue or toweling is worked back like ordinary broke. As in many mills all over the country, a special analine blue dye mark on bag paper impregnated with melamine is used so the paper can be easily distinguished and kept out of returnable broke where desired. It has simplified waste utilization procedure in many mills as witnessed by PULP & PAPER INDUSTRY editors from Georgia to the Northwest.

A western mill found that by feeding the broke back in small quantities while the treated paper is fresh or before the melamine resins have matured, no trouble is encountered in getting a satisfactory furnish.

Restrictions Now Off

Late this summer the WPB removed all restrictions on melamine so that its availability is no longer a question mark as management discusses its possibilities. Cyanamid has stated to PULP & PAPER INDUSTRY that there is a comfortable excess of raw materials, and that even though the present manufacturing capacity is adequate there is already a definite plan for the expansion of these facilities. Last month the price was lowered about fifteen per cent per pound, possibly indicating a downward trend as manufacturing costs are lowered.

Some mills are beginning development of peacetime wet strength papers or are well along on such development.

Definitely, the postwar emphasis seems to be on papers that can "take it." The public, both that part now in service and the part which has worked at the war on the home front, has come to expect a great deal more of paper than it has in the past. There is right now a continuing effort to substitute paper for more expensive materials all along the line, and paper makers are realizing that here is a broad possibility for an extension of the market. There is room for improvement in some of the present paper products, and manufacturers recognize that we now enter the crucial time when many paper products must again compete with materials on a peace time basis. For example, will malted milk powders continue to be received by the confectionery counters in paper rather than metal?—to pick one example at random. The answer will lie eventually with the consumer, and its answer will depend upon his experience with paper products far removed, perhaps, from malted milk powder.

There is a time for all things. Once again it is time for selling. That is why melamine and wet

Wet Strength Map Paper for Civilians

A large tonnage of white, smooth wet strength map paper made its civilian appearance in September as part of the $200,000,000 overall surplus property disposal program announced by the U. S. Department of Commerce, Office of Surplus Property.

Suitable for offset or letter press printing, the map paper was offered for loose-leaf, ledger, price books, road maps, etc. Several big mills discontinued making the paper and presumably others have, also.

It is made from bleached sulphate to Army specifications, and retains 40% to 50% of its dry strength after it has been thoroughly saturated. The paper is available in 22x29, and 35x45 sizes, substance 24/500-250 lbs. to a case, and is packed in waterproofed lined cases originally intended for overseas shipment.

Sales were being made through regional offices of the Office of Surplus Property in New York, Boston, Philadelphia, Cincinnati, Atlanta, Chicago, San Francisco and Seattle.

strength qualities may take on new meaning. Wet and dry characteristics not known in paper prior to 1941 may mean the gaining of new peacetime markets.

Brief Description Of the Process

For those in management who may want to instruct their laboratories to look into melamine, a brief and general description is given here, based on data from Cyanamid.

Parez 607 is a melamine formaldehyde resin developed specifically for the treatment of paper. It is ordinarily used by adding it in solution form to the slush stock either at the beater or some other point of the machine system up to and including the headbox. The dry resin is dissolved in a dilute acid solution, aged under specific conditions, and then fed to the slush paper stock.

As a result of aging the solution under acid conditions, the resin is transformed into a colloid having remarkable properties, one of the most important being that the particles become absorbed on the cellulose fibers and are substantially retained there throughout the remainder of the papermaking operations.

A typical formula is given, based on the preparation of 100 gallons of solution containing resin in the proportion of one pound per gallon. Suitable adjustments can easily be made to prepare batches of larger or smaller size. For convenience in laboratory work, the formula is also given for small batches on both volume and weight basis.

M. L. EDWARDS, Plant Engineer, Pulp Division, Weyerhaeuser Timber Co., Longview, Wash., who has returned to his duties after 3-year leave of absence, during which he worked in California and later with Thompson Products, Inc., Cleveland, O., for the government primarily on development of aircraft fuel booster pump. This pump was used on Mustang fighters, first series of B-29s, and other big aircraft. Also, Mr. Edwards studied aircraft lubricating system problems. During his absence Don G. Felthouse was Acting Plant Engineer.

	Mill Scale	Laboratory Scale By Weight	Laboratory Scale By Volume
Water (between 80-100° F.)	88 gals.	183.1 g.	184.2 cc.
Muriatic Acid 20° B*	4 gals. (or 39 lbs.)	9.9 g.	8.5 cc.
Total Water plus Acid	92 gals.	193.0 g.	192.7 cc.**
Parez 607	100 lbs.	25 g.	(25 g.)
Total, Final Volume	100 gals.	218 g.	208 cc.

*20° Be muriatic acid contains 31.45 per cent HCl. If acid of higher or lower HCl content is used, suitable adjustments should be made. If acid of other strength is used, the volume of water must also be adjusted so that the total volume of water plus acid is always as shown.

**In laboratory practice it is easier to dilute the acid to approximately 190 cc., dissolve the resin and then add sufficient water to bring the final solution to exactly 208 cc.

The acid is stirred into the water, then the resin stirred into the acid-water solution with constant agitation (hand paddle or motor stirrer). Agitation is continued for at least thirty minutes. The total volume of the solution after dissolving the resin should be 100 gallons. If the total volume is somewhat less than this, cold water should be added to correct this volume.

If the resin shows evidence of being lumpy (due to exposure to high humidity or liquid water) it is advisable to add the resin through a screen of about ¼-inch mesh. Any friable lumps remaining on the screen should be crushed and allowed to pass through the screen. If the lumps are hard and glassy they should not be used.

The temperature of the resin solution should be between 80 and 100° F. The resin content is approximately 12 per cent, or one gallon of solution contains one pound of 607 as received. The specific gravity of the solution is approximately 1.05 measured at 60°/60° F.

It is important that the simple directions for making up the resin be followed closely. The particular points to check are as follows:

1. Quantity of muriatic acid—if acid is not 20° Be strength (31.45 per cent HCl) suitable adjustment in quantity should be made.

2. Volume and temperature of water (before addition of acid and resin).

3. See that the correct amount of Parez 607 is assembled for each batch—no more, no less.

4. The sequence of the addition of materials should be exactly as shown. Under no circumstances add additional muriatic acid after the resin has been added, as immediate coagulation is likely to occur.

5. Agitation should be thorough and should continue until solution is complete (allow at least one-half hour. Additional stirring does no harm.)

This solution should stand three hours (minimum time) after addition of all resin, before adding to paper stock. The acid-resin solution remains stable and usable for about a week if the temperature is 100° F. or lower. If kept for longer periods or at higher temperatures the stability will be reduced and gelling will occur in a shorter time. In common practice it has been found satisfactory to prepare the resin solution one day and use it the next one or two days. If for any reason the resin solution must be kept for more than four days it should be diluted to 6 per cent or even 3 per cent solids. Some mills prefer to dilute all of their resin before adding to the stock, because of difficulty in metering small volumes of solution, or in specific instances, to obtain better distribution of the resin. In any case, the resin should be allowed to age at 12 per cent solids for at least three hours before diluting.

The resin solution is added to the slush stock as close to the machine headbox as possible, while still allowing time for uniform distribution of the resin. Passing of the resin-treated stock through refiners, dirt separators, or other points of violent agitation should be avoided as much as possible. Some mills successfully add the resin solution at the fan pump, while others have better results adding the resin after this point, at the screen outlet, or headbox itself.

The quantity of resin required depends on the results desired, and varies from a fraction of one per cent (per cent dry resin solids based on dry fiber weight) for such items as toweling stock to five per cent for paper that requires an exceptionlly high degree of wet strength. For most grades, between two per cent and three per cent resin solids on fiber gives satisfactory results.

Handling Broke

Due to the relatively permanent wet strength properties of melamine resin treated papers, the re-use of the wet strength broke requires special defibering technique. All wet broke and dry broke directly off the machine should be re-pulped as soon as possible, as the wet strength normally continues to increase on storage. Beating conditions of high temperature and low pH tend to destroy the wet strength properties and most papers can be disintegrated by beating at 170-190° F. in the presence of 2-3 per cent alum (based on fiber). Excellent results are obtained by pressure cooking (i. e., rag cookers, digestors) for a few minutes even without alum or other acidic materials, and processing in a broke beater in the normal manner.

The following procedure has been found satisfactory for several grades of wet strength paper:

1. Heat water in broke beater to 170-190° F.

2. Add alum to pH 4.5 (if white water is used, possibly no additional alum will be required).

3. Add the wet strength broke and circulate until disintegrated.

In certain cases it has been found that wet strength broke tends to wrap around the shaft when added directly to the beater. It has been found that a preliminary shredding of the dry broke or wet disintegration in other equipment

overcomes this tendency.

Many mills using wet strength resin are now reclaiming their waste paper. The common methods being employed in reclaiming wet strength broke are:

1. Pulping Beater—If plenty of heat (180° F. or higher) plus 3 per cent of alum (or the equivalent of other acidic material) based on the weight of dry broke are employed, most broke succumbs, provided the water is hot before the introduction of the broke, and especially if the broke is reworked immediately after coming from the paper machine. However, the beater should be capable of doing real work on the stock.

2. Dilts Hydrapulper—Defiber wet strength pulp with the use of heat while maintaining a fairly low pH.

3. Pressure Digestor—A steam pressure of 20 lbs. per square inch, with or without alum, softens the broke so that it may be readily disintegrated in the beater.

4. Sale—At least two mills have advised that they will purchase all wet strength broke offered, of any kind whatsoever.

As in any process, certain precautions are taken in the preparation and handling of acid-resin. The temperature of the water-acid mix for dissolving the resin should not be above 100° F. Tanks and piping used for dissolving and storing the solution should be corrosion-resistant.

Resin-treated stock may be appreciably slower on the wire than untreated stock, thereby necessitating machine adjustments. And makers of colored papers should determine first the effect of the resin on the dyes present, and for information on specific dyes the dye supplier should be consulted if necessary.

No alum or other chemical agents are required with the Parez 607-colloid, very important where absorbent papers are desired. The retention of fillers is sometimes improved, and the water resistance of rosin sized papers is increased appreciably, it is stated.

ERIK ZIMMERMAN, Assistant General Superintendent, The Chesapeake Corp. of Virginia, West Point, Va., whose fame as an amateur movie photographer is spreading among his associates in the southern industry.

Situation on Chemical "Front"--Postwar Demand to Be High

THE highly important trends in more coatings and resins in the manufacture of paper brings to mind the tremendous strain put on the entire chemical industry on behalf of the pulp and paper industry. Non-fibrous materials were made the subject of a report this year which was prepared for TAPPI under the chairmanship of E. N. Poor of American Cyanamid and to which contributions were made by several representatives of the chemicals industries.

Demand for the major nonfibrous raw materials continued at the peak levels of 1942, the requirements being about 2,000,000 tons of pulping chemicals and 1,330,000 tons of fillers and sizing and coating materials. This year will undoubtedly see this level maintained, and very probably a rise in the latter figure.

It is not paradoxical that a reduction in pulp and paper manufacture witnessed a rise in demands for chemicals. The war uses for paper were in grades and products requiring greater amounts of natural and prepared fillers as well as sizing and coating materials. Map papers, special containers, photographic papers, and other war demands were the cause. Looking ahead, these products have uncovered postwar uses and will open the way for a further demand for nonfibrous supplies. Great plans are in the air for large publishing units which involve huge amounts of coated papers. Special wraps and containers for foodstuffs destined for occupied and liberated areas are in the picture, as well as new domestic products in the specialty and container fields.

The reduced production of sulphuric acid has created a current shortage in caustic soda. Hydrated lime is in fair supply.

Clay Use Increases

The use of clays, on the increase, now runs to about 600,000 tons annually. Use of titanium dioxide in the paper industry has increased about 300 per cent and totals 30,000 tons annually.

Rosin sales and shipments show a decrease (even though victory stocks require more sizing than peace-time grades) due to restrictions created by Order M-387. Casein is reported available in ample stocks and shipments from Argentina are meeting the paper industry needs. Alum quality is now close to prewar due to the lifting of restrictions on bauxite and production continues to be adequate.

Use of sodium silicate has improved in coagulating and preventing raw and waste water corrosion and this development will be of much interest to the pulp and paper industry.

As to starch in the industry in 1944, the war increased the demand beyond the supply. Starch is not yet plentiful but the situation improves. The war led to increased use for coating. Consumption of wax sizes continues above prewar levels.

Dyestuffs

The 1944 consumption of dyestuffs was about at 1943 levels, and quality has been maintained. Any shortages are believed to be of a temporary nature.

A great improvement in the glycerine supply resulted in the lifting of restrictions on that pasticizer. Sorbitol is on allocation, and so is urea although requests are granted in full after screening. Glycols are allocated, and invert sugar is rationed and indications are that the quota will be cut to 70 per cent this year.

Urea formaldehyde, phenol formaldehyde, and melamine formaldehyde types of synthetic resins were utilized to the greatest extent among the various synthetic resins, and in the laminating field the phenol formaldehyde was most widely utilized.

Animal glue has been under allocation since January of 1944. It is not expected that further curtailments will be necessary. No supply problems have existed in wax sizes.

At time of going to press there were no actual revocation of restrictions, but they were expected momentarily on chlorine, glue, titanium and others. The caustic soda situation was tight, although it was believed that the normal consumer was receiving a bit more than during the war. A surplus existed on chlorine in the third quarter of this year, and as we write, the Chlorine Alkali Industry Advisory Committee has recommended October 1st revocation of Order M-19. Distribution of soda ash, particularly in bagged lots, has been improved by weather conditions, and the curtailment of war demands has resulted in regional easing here and there.

NEW BRAZILIAN PULP AND PAPER MILL Is Industry's Largest in South America

ON pages 18-19, PULP & PAPER INDUSTRY presents the first photographs of the largest pulp and paper mill in South America, built under the most difficult wartime conditions.

This sulphite and groundwood pulp-newsprint mill has risen in a wilderness in Brazil through the cooperative efforts of three governments—the United States, Canada and Brazil—and in no less degree through the teamwork of leading engineers and equipment and machinery companies of Brazil, United States and Canada.

It might well be described as a monument to the "Good Neighbor" policy of the Americas—and a fitting one, too, because here is one of the most modern and up-to-date mills of its kind.

This mill was built as a result of the severe shortage of pulp and newsprint in Brazil in recent years.

In 1940 Brazil imported 63,000 tons of pulp and 42,000 tons of newsprint. Because of unfavorable world trade conditions, lack of shipping space and limited production for export, these importations were severely curtailed during the war.

Anticipating the crisis imperiling Brazil's paper and publishing enterprises, President Getulio Vargas of Brazil requested Industrias Klabin do Parana de Celulose S.A., Sao Paulo, Brazil, to establish the first pulp and newsprint mill in Brazil, according to Edmund E. Levin, U. S. representative of that company.

Productive capacity of the mill—40,000 tons of bleached and unbleached sulphite pulp, 48,000 tons of newsprint and 30,000 tons of groundwood annually—will not only assure the supply of these critical materials to Brazil, but make possible some relief of the shipping situation. All of the groundwood pulp will be consumed at the mill but chemical pulp will be sold to other Brazilian paper manufacturers.

Mr. Levin further stressed to PULP & PAPER INDUSTRY that this project is regarded as having substantial economic benefits in that it releases foreign exchange for Brazil's purchasing program of expansion.

SITE OF NEW INDUSTRIAS KLABIN Mill in Brazil is shown on above map. The mill is near Monte Alegre. Edmund Levin of Industrias Klabin told PULP & PAPER INDUSTRY that it is possible the mill will be in production by the end of this year.

Started in 1941

Under construction since 1941, the mill has been built at Monte Alegre, state of Parana, Brazil.

The Parana Pine, as experiments have shown, is ideally suited for the manufacture of pulp and newsprint. This pine is known in Brazil as "Pinheiro" (Auracalia Brasilensis) and is so plentiful and abundant as to make the mill self-sustaining. It differs from the ordinary pine, found in the United States, in that it contains no pitch or resin, even when freshly cut. Exhaustive tests, made in 1935, at the Herty Laboratory in Savannah, Ga., and in 1940 at the University of Syracuse, College of Forestry, Syracuse, N. Y., have shown that the required horsepower per unit capacity is considerably less than that of other woods used.

The sulphite cooking process of this wood has been shown to be unusually successful. The pulp yield of this wood is very high. It has exceptionally long fibers. Mr. Levin said a great percentage of groundwood can be successfully mixed with a much lower percentage of sulphite to produce a good quality paper.

It can thus be seen that the wood question in and of itself, when guided by an intelligent plan of reforestation, presents no problem or obstacle to the success of this project.

It is estimated the ultimate cost of this project will be approximately $10,000,000. For this investment, an entire new industry has been created by utilizing the resources of a wilderness exceeeding 70,000 acres. An entire town has been built, including schools, churches, movies and housing with all modern sanitary conditions, and there are about 10,000 people presently at the mill site.

In addition, a complete network of highways has been constructed to link the various phases of this development and to overcome the staggering transportation problem with regard to materials, personnel and provisions.

The general consulting engineers for the project were Johnson & Wierk, Inc., 415 Lexington Avenue, New York, N. Y.

Principal Equipment

The caustic soda-chlorine and bleach plants were built under the supervision of the Westvaco Chlorine Products Corp., New York, N. Y., who also supplied material. Chlorine is being manufactured at the site.

In the sulphite mill, the three digesters of riveted construction, of 15' diameter and 44'height each were designed and built by The Portland Co., Portland, Maine, and the acid system in connection with the sulphite mill is of G. D. Jenssen Co. type.

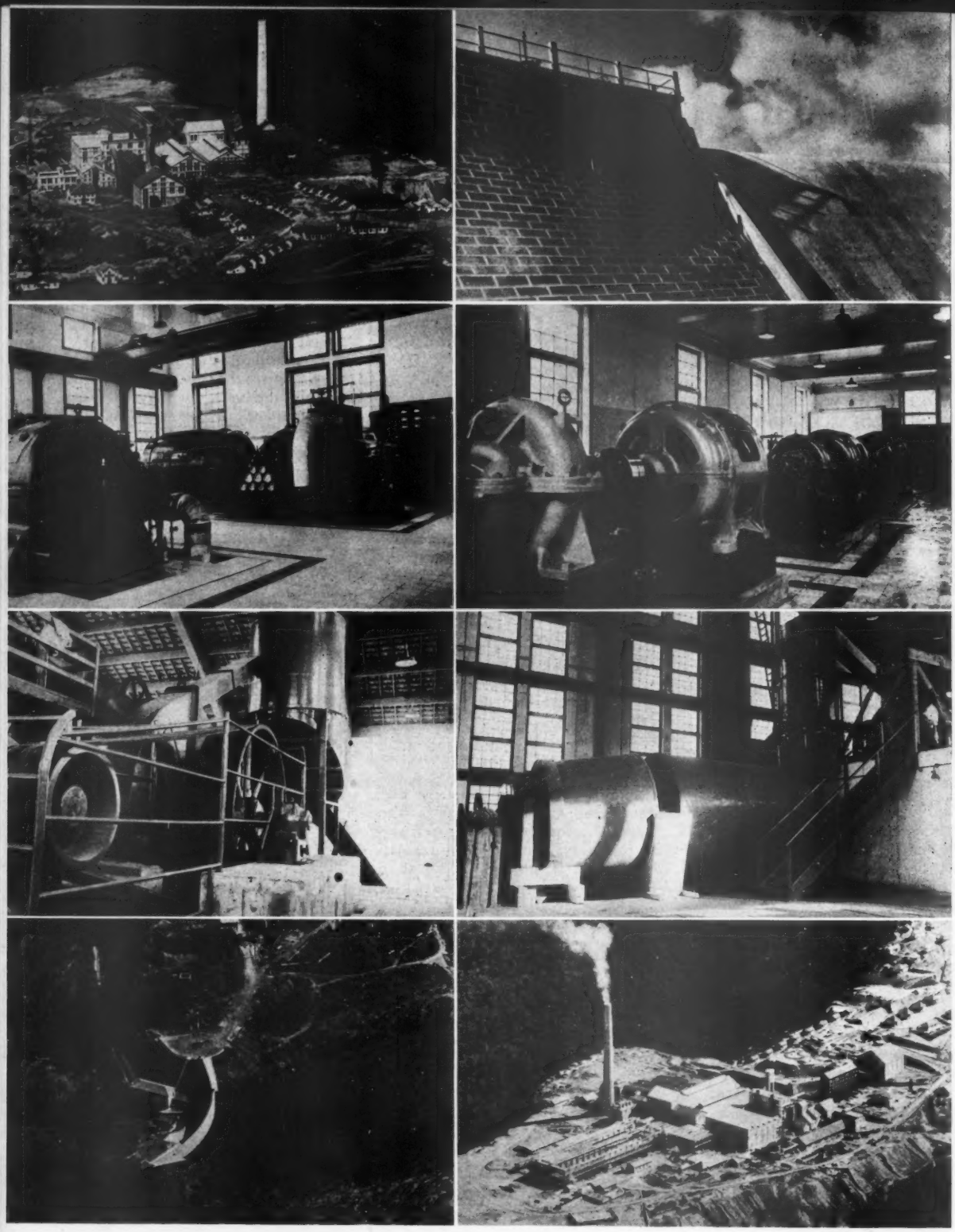
The steam generated power is provided by three cross drum sectional header boilers designed and built by Combustion Engineering Co., New York, N. Y.

The hydro-electric power is furnished by two vertical type S. Morgan Smith turbines, directly connected to 10,000 KVA General Electric generators. Auxiliary equipment is provided by two steam-turbo units. The power penstocks and scroll cases are plate steel, designed and furnished by S. Morgan Smith Co.

The water filtration plant is mainly supplied by Hungerford & Terry, Inc., Clayton, N. J.

The pumping equipment, including large water supply units for mill requirements was furnished by Worthington Pump & Machinery Corp., Harrison, N. J., and the electric motors, including power transformers for the entire project, by Westinghouse Electric International Co.

The starting equipment for all motors, including switch gears and



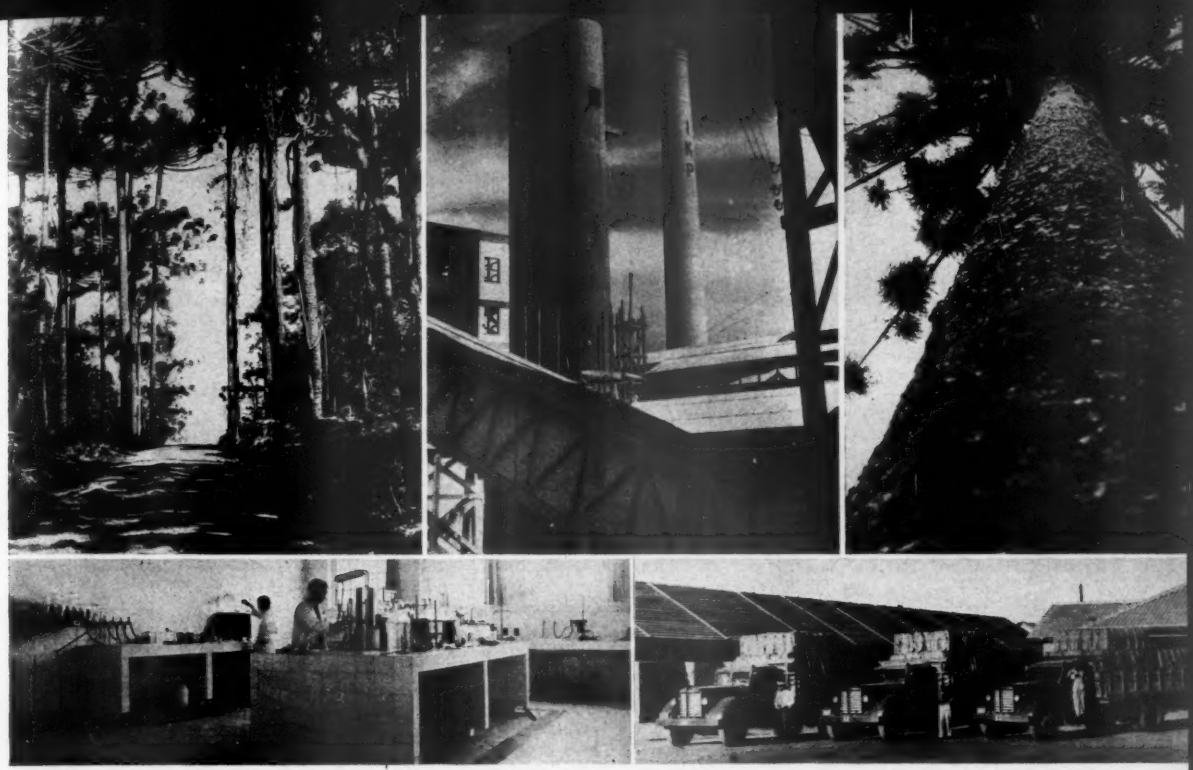
HERE ARE FIRST PICTURES OF THE NEW PULP AND PAPER MILL built in Brazil, which is the largest in South America and is already active in pulp market. It will make newsprint and board from pine wood.

Top views—Air view of company town and mill (note church in left foreground) and a side view of harmony dam (level of 12 meters).

Second row—Westinghouse and General Electric turbines on left and Worthington pump on right.

Third row—Wood splitter and chipper on left and disintegrating screens on right.

Lower row—An air view of the dam and another air view of the mill and town.



MORE VIEWS OF NEW BRAZILIAN PULP AND PAPER MILL: Upper row (left to right): Road is cut through pine forest emerging at mill site; a view of the tower, conveyor and stack at the mill with the initials of Industries Klabin on the stack, and a closeup view of a huge pine used as pulpwood. At lower left, the laboratory, and lower right, trucks loaded with soda pulp.

overhead transmission line between the hydroelectric plant and the mill was supplied by International General Electric Co., Inc.

In the groundwood mill itself there are four Kamyr grinders, built by Sandy Hill Iron & Brass Works, Hudson Falls, N. Y.

The 192-inch, 1400 feet per minute newsprint machine, including general machine and repair shop, was furnished by Bagley & Sewall Co., Watertown, N. Y. The machine is equipped with General Electric sectional motor drive and motor generator supply unit. There is also a 120-inch pulp drying machine, a board machine and a tissue machine.

Canadian Suppliers

Some of the equipment came from Canada. The circulation system and acid accumulator for the sulphite mill were supplied by Shawinigan Chemicals, Ltd., and Dominion Bridge Co., respectively. The chipper and rotary screens were supplied by Paper Machinery, Ltd.

There were many difficulties overcome in the assembling of material at various points of origin for transportation, and in obtaining cargo space because of wartime shortages etc. It was a most complex shipping undertaking for wartime.

Eventually, this mill also will produce 50 tons of board on a 100-inch cylinder machine. The mill is already in a position to produce a certain amount of chemical pulp by using its steam power plant, but no paper or cardboard were to be produced until the hydro-electric plant is in operation.

Completion of the power plant had been considerably delayed by shortage of cement and other materials as well as by technical difficulties and shortage of labor. It is not expected to be in complete operation until early 1946. This new mill is faced with transport difficulties which may hamper delivery of its products until such time as railway facilities can be improved.

Brazil Paper Industry

Some general information on the Brazilian paper industry is supplied by the Brazilian commercial secretary at Rio de Janeiro. According to the data from him there are 41 paper producers in Brazil with a total aggregate production in 1944 or 139,613 metric tons. Ten of these firms have an individual production of over 5,000 tons per year and 21 produce between 1,000 and 5,000 metric tons each per year. The equipment (mostly German) is generally old and slow but extremely versatile and most of the mills produce a very wide range of paper which would not be possible on faster and more specialized equipment.

Production by groups in 1943 and in 1944 was as follows:—

	1943	1944
	Metric Tons	
Newsprint	8,480	8,935
Printing paper (other than newsprint)	22,400	23,658
Writing paper	25,871	29,364
Kraft	9,614	11,879
Wrapping paper (other than kraft)	52,385	58,046
Miscellaneous items	6,927	7,729

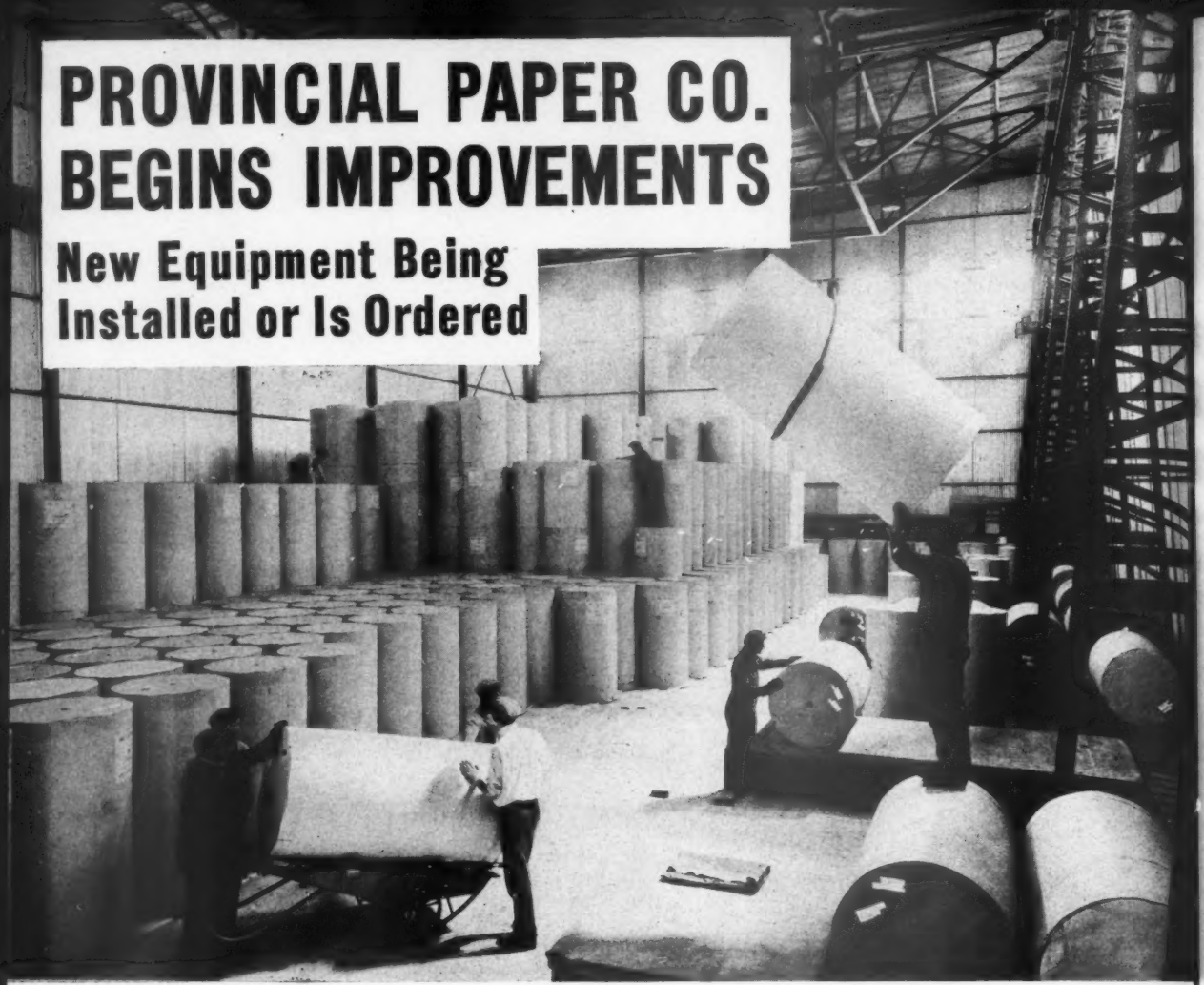
Total production of paper and board increased from 102,831 metric tons in 1937 to 126,706 in 1943 and 139,613 in 1944. Growth would have been more rapid in the war years if new equipment and woodpulp had been freely available; but there is only one manufacturer of paper machinery in Brazil, with a small production of machines of a very limited capacity, and pulp imports are strictly controlled.

Most of the mills seem to be planning for increased production after the war and the purchase of more modern equipment. Net profits of all mills in the last few years have been extremely high and reserves have been built up to purchase new equipment when conditions permit.

The geographical distribution of paper mills in 1944, with production shown within parentheses, was as follows: Federal District, 6 mills (11,693 tons); states of Rio de Janeiro, 4 mills (21,193); Sao Paulo, 17 mills (80,321); Parana, 2 mills (4,802); Sta. Catarina, 1 mill (2,753); Rio Grande do Sul, 5 mills (5,145); Minas Gerais, 4 mills (9,417); Bahia, 1 mill (999); Pernambuco, 1 mill (3,556 tons).

PROVINCIAL PAPER CO. BEGINS IMPROVEMENTS

New Equipment Being Installed or Is Ordered



ALREADY the largest manufacturer of book papers in Canada and one of the most efficient operations of its type on the continent, Provincial Paper Co. of Port Arthur, Ontario, is planning for still further improvement in production in the future.

When a representative of PULP AND PAPER INDUSTRY visited the mill recently, General Manager A. G. Pounsford, O.B.E. (Order of British Empire) of the company's Port Arthur Division, announced that a new 10-knife Carthage chipper was on order; that the machine shops are to be extended and that a new loading platform is to be built. In addition, an additional Erie layboy and a Hamblet paper cutter are being installed.

At present, a two-stage bleaching process is in operation at Port Arthur, using a high density Thorne tower for the first stage and a Bellmers in the second stage. Some consideration is now being given to third-stage bleaching, depending a good deal on when and if the required equipment can be obtained.

Provincial Paper Co. also operates three other paper mills in Ontario—at Thorold, Georgetown and Mille Roche. But only the Port Arthur mill produces its own bleached sulphite, and 700 tons of this is shipped monthly to the company's other mills. Another 1100 tons of sulphite is used at the Port Arthur operation, which also makes groundwood.

Originally conceived as a sulphite mill and nothing else, the Port Arthur mill was established in 1917 and not until the company was reorganized and given its present name in 1922 was the first paper machine installed. Mr. Pounsford, who has been with the company through all its pioneering stages and was recently honored by King George VI with the Order of the British Empire for his generous community service during the war, went to Port Arthur from the Champion Paper & Fibre Co. The Port Arthur mill is largely the fruit of his skill and resourcefulness as an operator and organizer.

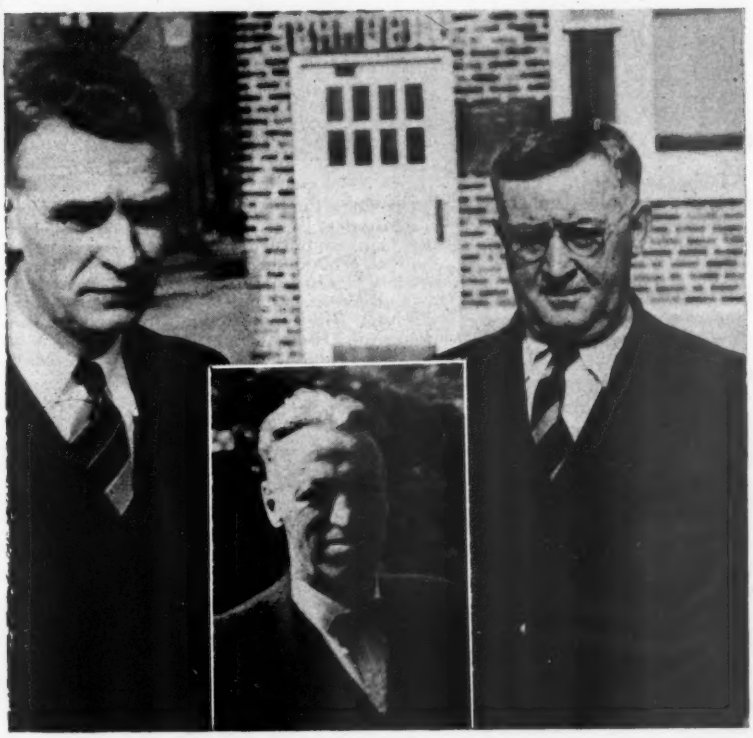
A. P. Gardner, who joined the company from Wisconsin, is paper mill superintendent; Alex P. Johnson, who has been with the company for 15 years, is pulpmill superintendent; A. G. McCracken, assistant pulpmill superintendent; J. C. McLeod, manager of the woods operations since the beginning of the company's operations; J. B. Matthews, chief forester; A. G. Scott, accountant; Lorne Goodall, resident engineer; J. C. Dickson, chief chemist; J. Wickstrom, chief electrician; E. R. Lyons, with the company since 1917, master mechanic; Frank Metzger, assistant paper mill superintendent, and J. W. Mitchell, chief engineer.

The Port Arthur mill consumes about 60,000 to 80,000 cords of wood a year, most of it coming a

comparatively long distance from the company's own camps — from Black Bay, 75 miles away, and Nipigon, 120 miles. Most of the workers at the company's own woods camps were German prisoners of war. Although their production per man hour was less than the regular civilian average, they were a substantial help during the period of acute labor shortage.

Black and white spruce, with some poplar and white birch are used. It is towed in bag booms to the mill by two company tugs, built in England. The booms usually contain from 8000 to 12000 cords. The pulpwood averages about 80 sticks to the cord and is delivered to the mill in 4-foot lengths. To hold the booms intact boom-sticks of squared spruce timber are largely used, connected with chains. Usually, four individual timbers are bolted or otherwise connected to form one good-sized stick. In the old days it was possible to obtain any amount of big spruce timbers for this purpose and they could be used by themselves, but the timber is running to small diameter now and the combination stick has been adopted to meet the situation. A few miles west, at Great Lakes Paper Co., whole Sitka spruce logs have been imported from the Pacific coast for this purpose. They are light, float high and have given good service, but it isn't as easy as it used to be to obtain logs of that nature from the west coast. Provincial Paper Co. treats its boom-sticks with osmos to prevent rot.

A. G. POUNSFORD, General Manager Provincial Paper Co.'s Port Arthur Division. He was honored by King George VI.



PORT ARTHUR MILL executives include A. P. GARDNER (left), Paper Mill Superintendent; ALEX JOHNSON (right), Pulp Mill Superintendent, and A. G. McCRACKEN (inset), Assistant Pulp Mill Superintendent.

Equipment

The pulpwood is conveyed to a battery of three suspension drum barkers and then to chipper or into the sorting gap for the grinder room. They are cut to two-foot lengths for the grinder and at that stage the wood requiring further barking is hand-barked. The bark is passed through an hydraulic press and is then used as fuel in the boiler room.

The stock is screened through a .045 centrifugal Sherbrooke screen.

The 10 grinders are of the 3-pocket type, manufactured by Waterous, Ltd., St. Catharines and Pascol (Port Arthur Shipbuilding Co., Ltd.).

The stock is then flat-screened.

The mill's peak capacity is 14,000 tons of bleached sulphite a year, 6,775 tons of unbleached sulphite, 21,250 tons of groundwood, 32,000 tons of paper.

Being located within the city limits of Port Arthur, one of the largest cities in Western Ontario, Provincial Paper Co. has no housing problem to contend with, and its enlightened labor policy has created and maintained an organization of happy workers.

"We're a pretty contented crowd here," said one of the company's veteran operatives. "All our digester help has been here for 26 years; that's just about a record, isn't it?"

Some time ago the company adopted such measures as group insurance, hospitalization plans and other progressive forms of relationship between management and men.

Mr. Pounsford's Views

Mr. Pounsford himself has strong views on the subject of labor relations, and he doesn't keep them to himself either.

"Forest products companies must come to the realization," says Mr. Pounsford, "that labor will play an important part in the post-war period, as the day of labor exploitation is definitely over."

He believes there are four basic factors affecting rates of wages: 1. The supply and demand of labor; 2. The collective bargaining ability of labor; 3. The classification of jobs and job analysis; 4. The judgment of management. Two special factors affecting wages of woods employes were the stands of timber and the terrain of the country.

Some employes seem to expect that during the postwar period small wages and long hours will return. "There isn't a chance," says Mr.

Pounsford. "We aren't going back to those conditions."

Mr. Pounsford admits that collective bargaining in the woods camps of eastern Canada has been difficult and that the problem hasn't been solved. Collective bargaining has been a simple matter of administration in the mills, but woods labor has been transient and unstabilized.

He thinks that the situation of the woods employe may be improved through special training and he admits that some progress has been made in this direction by the Canadian Pulp and Paper Association. A forestry school might help. Anything that would encourage woods crews to know more about their craft and stay on the job should be promoted, in his opinion.

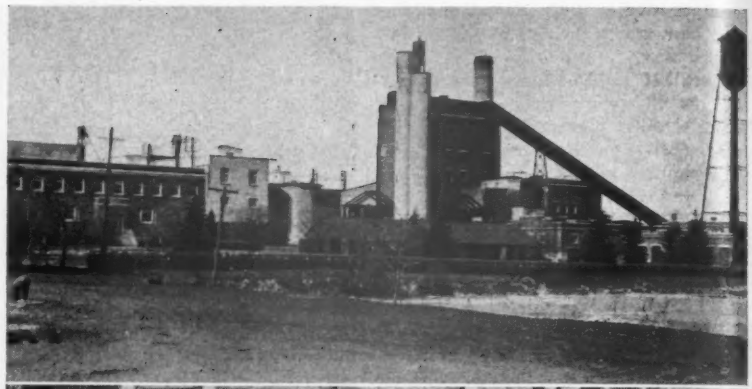
Provincial Paper Co.'s Port Arthur division employed about 280 German prisoners of war. "We found that we had to take as much time to learn to handle them as they did to understand us," he says. "But we also found that in many cases they learned very rapidly. We supplied them with booklets, printed in German, telling about woods operations and they studied them assiduously."

"The pulp and paper industry has reached the point where job analysis is essential," he added. "Job analysis and evaluation will become more and more the basis of labor relations."

And he believes that as service men return to work in the woods they will demand and be entitled to better recreation and living facilities and better wages.

An optimist regarding future prospects of the pulp and paper industry, Mr. Pounsford foresees the day when there will be much fuller utilization of wood species, when all species will enter into some manufacturing process.

Head office of Provincial Paper Co. is in Toronto, at 388 University Avenue. S. F. Duncan is president; W. H. Smith, vice-president; W. S. Barber, secretary-treasurer, and J. B. Piper, sales manager.



GENERAL VIEW of Provincial Paper Co.'s Port Arthur mill, from the Lake Superior waterfront, and (below) a group of staff at a Victory Loan celebration. The district chairman of the loan committee is shown congratulating Alex Johnson, Pulp Mill Superintendent (right) on achieving the gold star in the loan drive. Front row (left to right): General Manager A. G. Pounsford (holding flag); H. Suddaby; J. C. Dickson, Chemist; A. G. Scott, Office Manager; Roy Lyons, Master Mechanic; Bill Stewart, Joe Brophy and Ray Rose. Back row—Tom Nicol, G. Ferguson, Hugh O'Leary, Superintendent of Finishing Room; A. T. Gardner, Paper Mill Superintendent; E. L. Goodall, Chief Engineer; F. Lavereau, W. E. Burleigh and C. Cappello.

New Merritton Manager

Russell C. Shearer, formerly resident manager of the St. Regis Paper Co., Norfolk, N. Y., has been made manager of the Merritton (Ont.) division, Alliance Paper Mills. He is a graduate of the New York State College of Forestry and a former member of the U. S. Forest Service.

M. P. J. Dolan, secretary of the Alliance Paper Mills for some time, will be assistant manager of the company, including operations at Merritton, Georgetown and Don Valley.

U. S.-Canadian Industry Urged to Cooperate

Close cooperation between the United States and Canadian pulp and paper industries to compete with "government-sponsored sales operations" of other countries and to meet the challenge of "increasing participation of government in business in Europe" is urged by R. M. Fowler, president of the Canadian Pulp & Paper Ass'n.

Addressing the Northeastern Division of the American Pulp & Paper Mill Superintendents Assn., at Poland Springs, Maine, Sept. 22, Mr. Fowler warned that "if mills of North America try to solve this problem individually, they will fail, and repercussions will affect the entire North American economy."

He said the pulp and paper industry "will welcome government activity and public interest" in its affairs in some matters, but in others should resist "forces that hamper free development."

He outlined many reasons for close collaboration between the U. S. and Canadian industries—dependence of U. S. on Canadian pulpwood and pulp, dependence of Canada on U. S. markets and need of both industries to "make plans two years ahead, or longer."

A New General Priorities Order Is Surprise Threat to Paper Industry

On October 31st most of WPB's reconversion functions will be turned over to the Office of War Mobilization and Reconversion headed by John W. Snyder. The disposal was on the recommendation of WPB Chairman J. A. Krug.

The announcement came as a surprise to many who thought that WPB would remain intact at least until January 1st. However, the Paper and Paperboard Divisions were not caught napping in the quicker process. At the time of the announcement it had already revoked almost all of its orders, pared down its personnel, and has for several months been well along on a wind-up program.

A small number of the Paper and Paperboard Divisions' personnel were to become attached to the Forest Products Bureau when the WPB divisions discontinue.

There will be some continuance—through OWMR—of allocations of critical materials and commodities, including a few chemicals and textiles.

While many industry executives are assuming that postwar Washington has ceased to be important in their operating plans and are bringing home their representatives in the capital, information reaching this magazine indicates that some caution ought to be exercised in this regard.

It's not all over as far as government controls are concerned as evidenced by the possibilities of priorities now being allowed on paper itself—something that never even existed during the war.

Industry men have been concerned over Priorities Regulation No. 28 which has just been put into effect and which allows any person to obtain a "CC" rating on a material still in short supply (and paper was not excluded) if it can be proved that the material is not available without the rating and that the lack of it will cause a bottleneck in a reconversion program.

The regulation provides a set of criteria which is general enough to allow the use of priority ratings for paper for general civilian uses whereas all through the war the Paper and Paperboard Divisions were among the few WPB Divisions to manage the heavy military requirements without priorities assistance. They are now working with legal counsel in an attempt to exempt paper and paper products from this new regulation.

L-120 Is Revoked

It is for such reasons as this that a few industry men, such as Grant Richardson, director of the Paper Division, on loan from Hammermill Paper Co., are staying on in Washington.

Aside from this regulation, most of those affecting the paper industry have been withdrawn. L-120—including all of its 16 schedules—has been revoked as of midnight September 30, as was predicted in the last issue of PULP & PAPER INDUSTRY. This is the regulation which controls weights, sizes, packaging, color and other paper qualities.

On the whole the paper industry has had very little reconversion to do. Mills are changing customers and, in some of the specialties in paper used by the Army are declining in production. Grocery bags will slowly become more plentiful. Over all is the important fact that pulpwood is likely to continue tight for some time to come.

FRASER S. KEITH, for 20 years Manager of the Department of Development, Industrial and Public Relations, Shawinigan Water & Power Co., Montreal, who has been appointed Vice President and Special Executive Officer of Canadian Forestry Association. He will organize co-operation in public forest policy on the part of boards of trade rural municipalities and other groups.

WPB Policy

The Paper Division's post-war policy has been to revoke restrictive orders as quickly as is feasible. While differences of opinion have arisen as to timing, the revocations we have made so far have been with the advice of the Industry Advisory Committees. Orders L-83 and L-209 were revoked immediately after V-E Day because materials used by paper mill machinery became at that time plentiful enough to permit it. Order M-286 was revoked at the same time because it was no longer serving the war effort.

Even though chlorine was still scarce during the summer, the opinion was practically unanimous among the Advisory Committees and leaders of industry that it was better to revoke L-11 while the market for paper was still very good.

After V-J Day with the Army and FEA cutbacks in requirements, the prospective increases expected to result from imported Swedish pulp caused the WPB to revoke M-241-a, M-251, L-261, L-279, L-304, M-351, and M-380, leaving on the books only the Standardization and Simplification Order L-120 and the Reserve Production Conservation Order M-241.

M-241 will remain indefinitely. The recent revocation of a large number of orders has allowed the Paper Division to accept the resignation of the administrators and consultants of the orders and, therefore, Leonard Smith, Fred Meendsen, Burton Ford, Arthur Fox, Claude Brown, Earle Strong and Walter Holzberger all will have left the division by October 31. These men will not be replaced.

Other consultants who have been spending only a few days a month in Washington, anyway, will also have left by that time. This list includes: Walter Wilcox, Hugh Vergara, Robert Foley, John Maloney, Paul Beach and James Madden.

Walter Croan of the Distribution Section was leaving because the work there has declined. John Calligan of the M-241 Section was to be replaced by Donald E. Smith.

As previously reported, the Division has moved in with the Forest Products Bureau in Railroad Retirement Bldg., and the statistical staff is directly responsible to Ben Cancell, the FPB chief.

Sulphite Mill Cooks With Ammonia Base In Norway; Another With Soda Base in Sweden

IN view of the impending changeover of some American sulphite pulp mills from a calcium base cooking system to other cooking processes, PULP & PAPER INDUSTRY made some inquiries concerning similar adaptations carried out in Norway and Sweden.

The only mill in the world now known to be using an ammonia base cooking process is the Toten mill in Norway and a summary of its processes and salient facts about its production are presented in this article.

The only sulphite mill in Sweden using another cooking base than calcium is the Storra Koparberg mill at Skutskär, which employs the soda base system. In a letter to this magazine, Prof. E. C. Jahn, of the N. Y. State College of Forestry, University of Syracuse, describes the Skutskär operation.

Ammonia System

Since 1935 the Toten sulphite mill in Norway has produced 100,000 tons of bleached pulp of different qualities using an ammonium bisulphite method developed by Mr. Engelstad, who heads the operation.

The mill equipment differs but very little from an ordinary sulphite mill, according to the Tekniska Meddelanden. The acid towers are very small, about 32 feet high, 4 feet in diameter and are filled with Raschig rings. Ammonia water is made in a special absorption tower. The average cooking acid contains 8% total and 1% combined SO_2. Ammonia (NH_3) consumption runs about 92 pounds per ton of pulp.

The cooking time for easy bleaching sulphite is 14 hours and the maximum temperature does not exceed 120 deg. C.

Ammonium bisulphite penetrates so rapidly into chips that a penetration period is unnecessary, it is said.

Wood consumption since the ammonium bisulphite cooking has been used is about 4% lower than during a period of eight years before this system was put into operation, when the calcium bisulphite method was in practice.

Screenings amount to 0.6% based on total production.

Mullen, tear and double fold are 20% higher than that of ordinary sulphite pulp, according to this report.

Furthermore, even fir is said to yield good quality pulps using this method when soft cooked. To remove pitch, 2% caustic is added to the pulp in separators to saponify removable resins.

Some recovery of ammonia has been reported at Toten but it is said to require use of lime, which brings back the scale problem the system is designed to avoid.

The Toten mill has developed a method of recovery by a distillation control process.

The sulphite waste liquor, using ammonia base, is easy to evaporate as there is no scale formation. The evaporated sulphite liquor is used in tanning hides. The Toten plan sold each year 2,000 tons of waste liquor, half as 60% solids and half as powder (dry). The sulphite waste liquor, evaporated to 60% dryness, has been used as fuel together with coal with good results. The liquor, in this case, is injected on top of the burning coal.

A pre-war visitor at Toten said ammonia was used only a few days each month, because it tended to remove lime from the digester brick. An impervious brick could have solved this problem.

Prof. Jahn's Letter

Prof. Jahn, who was in England, Sweden and Finland from May 1943 to August 1944 as research collaborator for the U. S. Department of Agriculture, said:

"There are no mills in Sweden or Finland using ammonia base and you are right that there is only one in Norway; at least I heard of only one mill operating with ammonia base in Norway. There seemed to be very little information available in Sweden regarding the success of this operation. Generally speaking most Swedish operators felt that it might be satisfactory for this mill in Norway because it can manufacture ammonia very cheaply by its hydro-electric nitrogen process but that system probably would not be suitable to Sweden."

Soda Base System

Regarding the use of soda base at Skutskär, Dr. Jahn wrote:

"The technical men of the Storra Kopperberg, particularly Harold Wellner, director of the Skutskär mill, have been experimenting with the soda base process for a number of years. Finally after having overcome most of the difficulties, particularly in the recovery system, they put the operation into commercial practice some time around the end of 1942 or early 1943, I believe. They feel confident in the success of the operation and have torn down their limestone towers.

"They admitted, however, that there were still certain wrinkles to be overcome but that the operation was becoming progressively smoother. Since the operation was still in process of development, they were not free to give out any details regarding it.

"Their sulphite liquor is first given a partial evaporation by blowing air through the warm liquor from the digesters as it flows over perforated inclined plates in a square wooden tank. The temperature drops from about 90°C to about 36°C and the liquor loses about 20% of its water. It is then fermented to produce alcohol, evaporated, and burned in a Tomlinson furnace.

"I did not notice any evidence of a desire to go over to a soda base on the part of other mills in Sweden or Finland. Since there is little magnesia in Sweden, there has been no development with respect to a magnesia base system. I found, however, that many technical men were interested in the process."

E. C. JAHN.

HORACE A. MOSES, founder and Chairman of the Board of Strathmore Paper Co., sits on porch of his home at Woronoake Heights, not far from the mill in West Springfield, Mass. Looking back over 65 years of producing some of the finest paper made in the industry, he now enjoys raising mountain laurel, as well. Some of it is shown in this picture.

ABOVE IS VIEW OF WESTMINSTER PAPER CO., New Westminster, B. C., which has already started an expansion program to virtually double its daily output of 35 tons of tissue, towel and sulphite specialties.
Also shown are three members of the Herb family. J. J. HERB (right), Chairman of the Board, who holds the shovel after turning first sod for extension of Finishing Room. E. M. HERB (left) is President and Gen. Mgr. of the Westminster company and his brother, F. J. HERB (center) is head of Pacific Coast Paper Mills of Washington, Bellingham, Wash.

Expansion Under Way At Westminster Paper Co.

Having already completed a new wharf and other waterfront facilities in connection with its $1,250,000 expansion program, Westminster Paper Co., New Westminster, B. C., has now started on extension of the finishing room, which will be 111 feet by 126, and three stories high. A new boiler house and machine room of reinforced concrete are also to be built.

The first sod was turned in preparation for this part of the project by J. J. Herb, chairman of the board of Westminster Paper Co., in the presence of his sons, E. M. Herb, president and general manager, and F. J. (Bill) Herb, vice president and head of Pacific Coast Paper Mills in Bellingham, Wash.

As discussed previously in this magazine, the output of the pioneer British Columbia paper firm is to be virtually doubled. It now makes 35 tons daily of tissue, towel and sulphite specialties. Employment will be increased by about 75 to 410. The payroll will be boosted to almost $500,000.

W. A. Duggan, Sales Mgr. Of Rhinelander Co., Dies

W. A. Duggan, sales manager for Rhinelander Paper Co., Rhinelander, Wis., for the past five years, died suddenly last month.

Mr. Duggan was widely known in the sales field and before joining Rhinelander he had been with the Consolidated Water Power & Paper Co., of Wisconsin Rapids, Wis.

Flintkote Co. Begins Expansion Program At New Orleans and Los Angeles

Ground was broken during the first part of August for the expansion of the Flintkote Co. in New Orleans which will add 67,000 square feet of manufacturing space to the plant.

This added space will be devoted to the manufacture of insulated sidings and asphalt, tar saturated felts and fabrics, including pipe wrapping materials. The construction contract is held by R. P. Farnsworth & Company, Inc., and was closed on a bid of $351,500 with completion in 240 days. The New Orleans plant of the Flintkote Co. was established in 1927 and since that time its operations have increased sevenfold.

A $3,000,000 expansion program for all the units of the Flintkote Co. has been announced and their research program has also been enlarged and intensified. A large portion of this expansion is under way at the Pioneer Division of the company in Los Angeles.

W. M. Lehmkuhl, who served for many years as manager of the New Orleans plant of Flintkote, has been transferred to East Rutherford, N. J., as assistant general manager of manufacture. He was succeeded as New Orleans plant manager by L. M. Winter, who had served as assistant manager for almost two decades.

J. Ronald Atwater Gives Views On OPA Postwar Policy

The man who was associated with the paper and paper products branch of OPA from November of 1941 until July of this year and who was Price Executive from November, 1943, until July, 1945 —the entire span of U. S. participation in World War II—naturally has some ideas as to what course OPA should pursue postwar. With this in mind, the eastern representative of PULP & PAPER INDUSTRY went last month to interview J. Ronald Atwater, now returned from Washington as assistant to the president, Mead Sales Company, New York.

"The OPA now has two courses open to it," Mr. Atwater said. "It can maintain a completely rigid attitude with regard to prices, failing to recognize the effect of its policy on re-employment, national income and expansion programs; it can insist on a full continuance of war-time attitudes—and if it pursues this course it will face almost certain oblivion in June of 1946 when its powers legally terminate and Congress will consider whether those powers should be extended."

The second course, which Mr. Atwater indicates is the desirable one from the viewpoint of both government and industry, he describes as follows:

"If wise, OPA will recognize the necessity of some leniency. It will allow price adjustments where such adjustments tend to bring back a normalcy in price relationships which have become gradually distorted through the war-time period. Such distortions are inevitable by the very nature of price control methods and occur by both price action and inaction. Where Government regulations and Industry acceptance have resulted in a reasonably even distribution of available products, even though certain subproducts are undesirable from a profit viewpoint, a forceful defense of such a stand can be presented for the war-time period. The question of essentiality of production thereafter becomes not one of winning the war at the lowest possible cost to the nation, but the essentiality of returning to peace time production and re-distribution to the extent that the "normal" pricing pattern has deviated, so will the pattern of manufacture and distribution be affected, with the result that supply and demand may be well in balance in one line and be in complete unequilibrium in another line in the same product category.

If, therefore, OPA can attain a policy of reasonableness, attuned to postwar rather than wartime conditions, it will be in a position to obtain from Congress an extension of its powers next June. I believe the majority will agree with me that such an extension will be desirable. Even the most optimistic do not contemplate that we will reach a completely normal condition by June, 1946, and that, therefore, price controls will still be desirable and necessary. A fluid policy of this nature on the part of OPA would dovetail perfectly with the administration's program for more jobs and a high national income."

Mr. Atwater is mindful that the public attitude toward OPA is generally critical. While he recognizes that much of this criticism has been due to rationing rather than price control, he also recognizes that by next June the pressure upon Congress to eliminate all controls may be very strong. From now until that time, therefore, OPA must create a clear record of cooperation, and a recognition of its peace time problems. It must be able to demonstrate that it has helped the pulp and paper industry, as well as other industries, to maintain itself, to modernize its plant, to create work and therefore jobs. "In brief," said Mr. Atwater, "it is the function of industry to produce and distribute its products at a reasonable profit. If OPA has not been helpful to this end, it is likely to get short treatment from Congress when the Emergency Price Control Act comes up for re-enactment.

While Mr. Atwater is fully in accord with control of inflation, he believes it is short-sighted to ignore the fact that we have had some gradual inflation and are bound to have more. His recognition of the realities of inflation in any postwar adjustment does not mean he favors any plan which would put our price system in jeopardy, Mr. Atwater emphasizes. "Just a common sense program of adjustment, cut to fit current conditions" is what he prescribed for OPA now. "I know from my experience that there are times when regulations must be rigid—that sometimes government bureau guidance cannot be halfhearted."

As a general policy, Mr. Atwater believes top shelf executives in OPA should give greater confidence to the opinions of the price executives in each branch. "After all," he says, "these are the men who, in many instances, were brought in from industry because they were familiar with the problems of industry. They are the men who are in close touch with their industry committees—and the goal of industry and of a government bureau is, or should be, one."

Mr. Atwater has only the highest praise for industry men with whom he worked while price executive in OPA. "During my tenure of office I had occasion to meet most of the members of the Advisory Committee, and to take part in the appointment of the Overall Advisory Committee," he said. "It was pleasant and instructive to work with the various members, and through your magazine, I'd like to express my appreciation of their efforts."

Fulton Returns to Pacific Coast Supply Co.

JOHN M. FULTON, who returns to Pacific Coast Supply Co., Public Service Bldg., Portland, Ore., as Manager, after a long term of service in the U. S. Navy as an administrative officer at the formerly "hush-hush" naval air base on Whidby Island in Puget Sound. This was one of the Navy's most important and biggest air bases.

John M. Fulton, Pacific Coast Supply Co., Public Service Building, Portland, Oregon, returned to his position as manager on September 10, 1945, after two years and nine months with the U. S. Navy. For the first period of service as a Lieutenant, U.S.N.R., he acted as an administrative officer at the formerly "hush-hush" Naval air station on Whidby Island in Puget Sound, known officially as Fleet Air Wing Six. Later, Lt. Fulton was with CVE 101, serving on the aircraft carrier "Matanikau" with the U. S. Pacific Fleet in the Marshall and Gilbert Islands areas.

Before joining up, Fulton had headed Pacific Coast Supply Co. for 2½ years as manager, and in all had been connected with the organization for 15 years.

Ed Tidland, who took over Fulton's duties during his absence, remains with the company in his former sales capacity, which included supervision of installations of equipment.

Weyerhaeuser Men Return

Pulp Division of Weyerhaeuser Timber Co., Longview, Wash., reports return to former employment in the mill of two service men: C. F. Miller, former chipplant foreman, after three years with the Seabees; and John Serena, machine room employe, after three years with the U. S. Navy.

Another returning veteran who was expected is Lt. Col. F. C. Lewis, former foreman of the shipping department.

Anacortes Chemist Injured

Nick Jappe, chemist at Coos Bay Pulp Corp., Anacortes, Wash., was resting at his Seattle home for a few weeks in September as the result of a brain concussion suffered in a fall at the plant. It was not a critical injury.

Paris Paper Mill Sends Engineer to Study Papermaking Machinery in U. S.

ADRIEN F. ALBARRANC, who studies new paper machinery for big Paris mill.

France is very much interested in technical and machinery improvements in the U. S. pulp and paper industry, according to Adrien F. Albarranc, consulting engineer for Les Papeteries Navarre, Paris, one of the largest mills in his country. Investigation of new machinery in operation and the development of technical processes in the manufacture of all grades was the purpose of Mr. Albarranc's trip.

He arrived in New York last month, and his two months' itinerary will take him to mills in New England, Eastern Canada, the South and California. Due to shortness of time, he will not visit Pacific Northwest mills, he said, but he expects to make yearly visits to the U. S. on behalf of his company.

France intends to buy considerable paper machinery in the U. S., he stated. Coal is still a great problem to the industry, but the situation is expected to be relieved by imports from Great Britain and the U. S. The makers of book grades and specialty papers suffer somewhat at the present time from the great emphasis put on newsprint, Mr. Albarranc told PULP & PAPER INDUSTRY during a visit to its New York office.

General business is being greatly curtailed for lack of paper, and it is not unusual for the largest and most influential companies to be stymied due to the impossibility of obtaining envelopes or business forms. The ration card system is still in effect in the printing trades for obtaining paper, he said.

France is debilitated in fact and spirit by the war, Mr. Albarranc said, but the people are willing and anxious to work. The U. S. should assist France toward this in every reasonable way, the French people feel. According to Mr. Albarranc, they are watching with hopeful interest the U. S. efforts toward the re-employment problem, realizing that the welfare of France depends greatly on U. S. ability to cope with postwar domestic problems.

Mr. Albarranc was with the French Army, and was a prisoner of war in Germany. Later he became a French liaison officer to the U. S. Army. Back in civilian life, and at his old profession, he says that he hopes for some years "of normal business and family life" now.

His U. S. address is care Col. Justin O'Brien, 21 Perry Street, New York City.

Ed Street Now Vice President in Charge Of Sales for Downingtown Mfg. Co.

ED T. STREET, who has been appointed Vice President in Charge of Sales for Downingtown Mfg. Co., Downingtown, Pa. He succeeds the late Jay Edge.

E. T. Street, who has been associated with the Downingtown Mfg. Co., Downingtown, Pa., for 16 years, has recently been appointed vice president in charge of sales, succeeding the late Jacob Edge. Prior to this, Ed, as he is known by his countless friends in the paper industry was in charge of engineering. In this capacity, his work was the design and development of new equipment and assisting the sales department in the sale of special machinery.

Noteworthy among these special machines, he developed Downingtown wallboard machinery, projected by the late Mr. Edge, and today this equipment is operating from Sweden to Australia and from Minnesota to Florida. At the present time, the company is building wallboard machines to be installed in Australia, Louisiana, Minnesota and Washington.

Before his association with the Downingtown Mfg. Co., Ed Street was for ten years chief engineer for the Ruberoid Co. During this time, he designed special machinery, built additions to various mills, designed and built a felt mill in England, designed and started-up the first asphalt oxidizing unit in England, investigated and studied the asbestos cement industry in Europe and designed the first pilot plant of this type for the Ruberoid Co. in the states. His work necessitated five trips to Europe and took him as far east as Budapest.

Prior to his association with the Ruberoid Co., Mr. Street was superintendent of power for the Minnesota and Ontario Paper Co., International Falls, Minn., for two years. There he had complete charge of and responsibility for the generation and distribution of approximately 50,000 H.P. This installation included water wheels direct connected to grinders; waterwheels connected to electrical generators; two boiler houses, one in Canada and the other in the United States; steam turbines; Corliss engines driving paper machines; Ball angle compound engines; Lenz poppet valve engines which he installed; also the largest sizes of H.R.T. boilers, Eire City boilers and B & W horizontal water tube boilers which he installed with special furnaces of his own design for burning both coal and hog fuel.

Good Forestry in the South; The Cost of Growing Trees

PULP and paper mills have done almost all of the reforestation in the South and have led the way in conservation measures and education of farmers to the possibilities of income from tree cultivation.

And yet this great pulp and paper industry in Southern United States uses only five per cent of the wood which is now being cut for manufacturing purposes or for firewood in that region of the country.

A southeastern tour indicates how these forestry ideas have taken hold. In the flat seacoast area of South Carolina, for example, a big lumber company a generation ago had cleaned out the timber and then closed up shop.

Recently a PULP & PAPER INDUSTRY editor viewed many miles of second growth long leaf pine, as far as the eye can see, on tree reservations of the Georgtown mill of Southern Kraft Division, International Paper Co., and the Charleston, S. C., division of West Virginia Pulp & Paper Co. Signs along the roadway record the plantings, the date of selective cuttings, etc. This publicity contributes to making the folks down there tree-crop minded.

Timber is definitely becoming a commercial crop. The pulp and paper companies acquired vast timber holdings on which they are growing trees scientifically.

Farmers throughout the South are now timber minded and developing substantial returns from their timber crops.

In addition merchants, lawyers, doctors, bankers, etc., in large and small cities and towns have and still are investing their money in timber lands. Land carrying thrifty stands of young pine is a bankable asset. And why not, since owners can commence harvesting timber when it is fifteen or twenty years old, first in the form of thinnings which go to the pulp mills, and then year after year, find a ready market for larger trees either at pulp mills or at sawmills. Many owners also derive substantial cash revenues from turpentine operations. Millions of dollars have been recovered by land owners from the conversion of old stumps and roots into naval stores. The industry has, of course, been tremendously stimulated by the war. A considerable industry has already developed in the South, using wood as the basis of chemical manufacture.

Twenty-five or thirty years ago most people, including leading Southern lumbermen, thought the production of forest products in the South was on the way out. A considerable number of southern operations moved West, others liquidated their holdings. Today the South is producing nearly half of all the softwood lumber manufactured in America, just as it did way back in the early part of the century. Almost everywhere one sees pulpwood on railroad sidings.

Forest Management Idea

The forest management idea in the South is not new and has been making progress for many years. But there was, with a few notable exceptions, nothing very tangible about it until rather recently. A few firms fumbled along with the germ of the idea of growing trees commercially.

Then came the pulp producers. When they learned that a crop of timber large enough for pulpwood could be grown in 25 years or less, they became intensely interested. This forestry thing had a practical look. The pulp companies made large purchases of cut-over lands which now total around or over 5,000,000 acres and which were placed under forest management. Today there are 600 trained foresters in the South working on public and private lands. Probably two hundred of these are engaged on privately-owned forests.

Farmers probably control 35% of the timber lands of the South, which makes them loom large in the picture. Another 30% of the land is held by absentee owners.

Pulp mills are drawing wood supply from lands 200 miles or more distant from mills. A few southern pulp mills are using from 1500-2000 cords per day.

Advice to Farmers

The Southern Pulpwood Conservation Association and the United States Forest Service have carried on widespread educational programs aimed to encourage better forestry practices on the part of farmers and private land owners. C. F. Evans of the U. S. Forest Service, Atlanta, Ga., head of the state and private forestry educational work in the South, told PULP & PAPER INDUSTRY something of the educational work that has been and still is being done. Foresters are constantly in the field, working through county agents, helping farmers develop their timber crop. They advise the farmers which trees to cut and which to leave, so that a continuous crop of timber can be harvested. Many absentee owners call upon Mr. Evans' office for advice and assistance in handling their timber lands. Much has been done in establishing better methods of producing naval stores.

Mr. Evans is but one of many who is enthusiastic over the possibilities of growing timber in the South as a crop. "A man can plant seedlings and be able to start harvesting pulpwood in 20 years," he said, "although it would be better if he would wait twenty-five years. This means that even a middle-aged man can take hold of a forest project and live to see his efforts rewarded."

Mr. Evans made some rough calculations for PULP & PAPER INDUSTRY indicating cost of growing trees. While these figures are estimates, Mr. Evans states they are close enough to show what can be done:

Cost of Growing Timber

	Per Acre
Cost of bare land suitable for planting	$2.00
Planting (seedlings and labor)	5.00
Replanting	1.00
Taxes (annual)	.08-12
Fire protection (annual)	.05-.06
(Farmers might not have this expense)	
Interest	? ?

This is variable, but at present low interest rates would not more than double the above cost for a 25-year period.

At the end of 25 years the land should have a stand of 40 cords per acre. At $2 per cord $80.

Planted stands produce larger yields than on areas which reseed naturally.

While under present conditions

STANDS OF VIRGIN LONGLEAF PINE LANDS OF GAYLORD CONTAINER CORP., NEAR THAT COMPANY'S OPERATION AT BOGALUSA, LOUISIANA, WHEN THE PREDECESSOR COMPANY—GREAT SOUTHERN LUMBER CO.—WAS OPERATING.

IN THOSE DAYS, BOGALUSA WAS THE SITE OF THE WORLD'S LARGEST SAWMILL. IT WAS SAVED FROM BECOMING A "GHOST TOWN" WHEN THE GAYLORD CONTAINER CORP. STEPPED IN WITH ITS BIG PULP AND PAPER OPERATION AND PUT LANDS LIKE THIS IN PRODUCTION AGAIN BY PUTTING TIMBER LANDS ON SUSTAINED YIELD BASIS.

ABOVE IS A TRACT OF LONGLEAF PINE THAT RE-SEEDED NATURALLY AFTER MUCH OF IT WAS CLEAR CUT. NOTE THE SMALL PINES IN VIGOROUS GROWTH.

A CREW OF 250 FARMERS AND BOYS BEFORE THE WAR PLANTED 180,000 TREES DAILY ON THESE LANDS OF GAYLORD CONTAINER CORP.

buying of timber lands in the South is not active, prices ranging from $10 to $15 per acre have been paid for properties carrying a fair stand of young timber.

In the South as in the West protection is generally considered the No. 1 problem in tree cropping. To this end, in all states determined efforts are made to keep fires out of the forests. Most of the states have fire lookout systems. Florida is dotted with steel lookout towers. Detection is the important thing. For the most part, fires are easily reached and in normal times, with the manpower available, few very large fires have ever developed. Now, with timber a crop, owners and state and federal agencies are more determined than ever to minimize fire hazard.

Logging Methods

Some Southen logging methods are highly mechanized. Tractors are being used in increasing numbers. A few modern truck loading units are in operation. There will be more now the war is over. One pulp and paper mill owns some one hundred logging trucks.

It is estimated that ninety-five per cent of the logs produced in the South are transported by truck Trucks are mostly light units. There are few, if any, dual axle trailers used in the southern lumber industry. Truck loads are small, probably not averaging over 1000 feet. Truck loading is mostly by mule or horse. Truck hauling distances run as much as twenty miles. A few operators haul loads of 2500 feet. They say that large loads such as are hauled in the West, are impracticable in the South. They say such loads would not be permitted on the highways. But the South's main highways are concrete and appear equal to those in the West. Most secondary roads are not graveled and likely could not stand heavy loads, especially in wet weather. For the most part, trucks can get all over the country, as the land is generally flat. During CCC days many miles of forest roads were built which are now coming in handy.

Power saws are being used quite extensively in the South. They like these new saws in the South, just as they do in the West, and find they result in substantial savings, and in these days of short labor supply help maintain the supply of logs.

There is a great deal of small contract logging in the South, especially in the pulpwood end of the industry. However, one of the largest and oldest concerns in the South, which for years did its own logging has now disposed of all its logging equipment and relies 100 per cent on contractors. One prominent southern operator pointed out that one reason more modern logging machinery and equipment is not used in the South is because many of these small operators are in no position to finance purchase of heavy trucks, trailers, tractors, loaders, etc. But, he said, that as time goes on this condition will change just as it did in the West.

J. FRANCIS STRUB, recently elected Vice President in charge of Sales to European Continent by directors of Parsons & Whittemore, Inc. The company has arranged for representation in European centers. Mr. Strub also is Sec'y-Treas. of U. S. Paper Exporters Council, Inc. He wrote a brochure "Idle Machine Hours or Postwar Profits?" which stressed of high production.

Elmer Herb and Ashby Return From Tour

Elmer Herb, president of Westminster Paper Co., accompanied by John Ashby, technical advisor, have returned from a month's tour of eastern Canadian and United States pulp and paper mills. Westminster Paper Co. is at present carrying out an expansion program costing more than $1,000,000.

Some of the Headaches Ahead For the British Paper Industry

A tribute to the pulp and paper industry of Canada, Newfoundland and the U. S. for assisting Britain to maintain its paper production during the war at 45-50% of pre-war levels was voiced recently by A. Ralph Reed, the Paper Controller for the United Kingdom.

Speaking at a meeting of the British Federation of Master Printers on June 12, he predicted a gradual easement of restrictions on the paper industry in that country and improvement of the quality of paper made.

These remarks were made before the Labor Party's smashing victory in the general elections of July, but it is understood the change in government will not affect this particular outlook.

He noted that British consumption of paper was only 35-40% of pre-war rates and this was largely for government requirements.

Forecast for Britain

His predictions, as reported in the World's Paper Trade Review of London, follow:

"Now we can look again to the Northwestern countries of Europe as sources of supply, we may well hope for a progressive easement of the restrictions which you have so patiently borne. We cannot, however, expect that this very desirable movement will be as rapid as we should like. We are still engaged in a major war of vast operational proportions, which makes very large demands upon our paper resources and shipping facilities.

"The production of pulp and paper in the continent of Europe will be much below the pre-war level for a long while to come, and the manpower situation in this country appears likely to limit both the production of paper and the various forms of conversion or processing, including printing, through which it passes into use.

"It will, however, be our aim to increase the production and supply of paper for printing and other purposes just as soon as and as rapidly as the circumstances will allow.

"I think it is generally accepted that Paper Control should continue so long as a scarcity exists, so that price inflation may be avoided and fair distribution of our limited supplies secured as far as possible. But I can assure you that any easement of the present forms and features of Control — and I use the word "forms" in more senses than one (laughter) — will be just as welcome to the Paper Control and Ministry of Supply as to the printers and others affected thereby (hear, hear).

"Another feature of the better times to come will undoubtedly be a return to something much more like the pre-war quality of printing paper generally.

"We shall badly need all the waste paper we can get for the manufacture of boards and wrapping papers; and this material, which has stood us in such good stead during the war years, should gradually disappear from printing paper and return to its former employment (laughter and applause). On the other hand, the revival of supplies of esparto is likely to be delayed for a time owing to conditions in North Africa beyond our control, so let us still be thankful for straw."

Bear Brand Chemicals Used Throughout West Coast Industry

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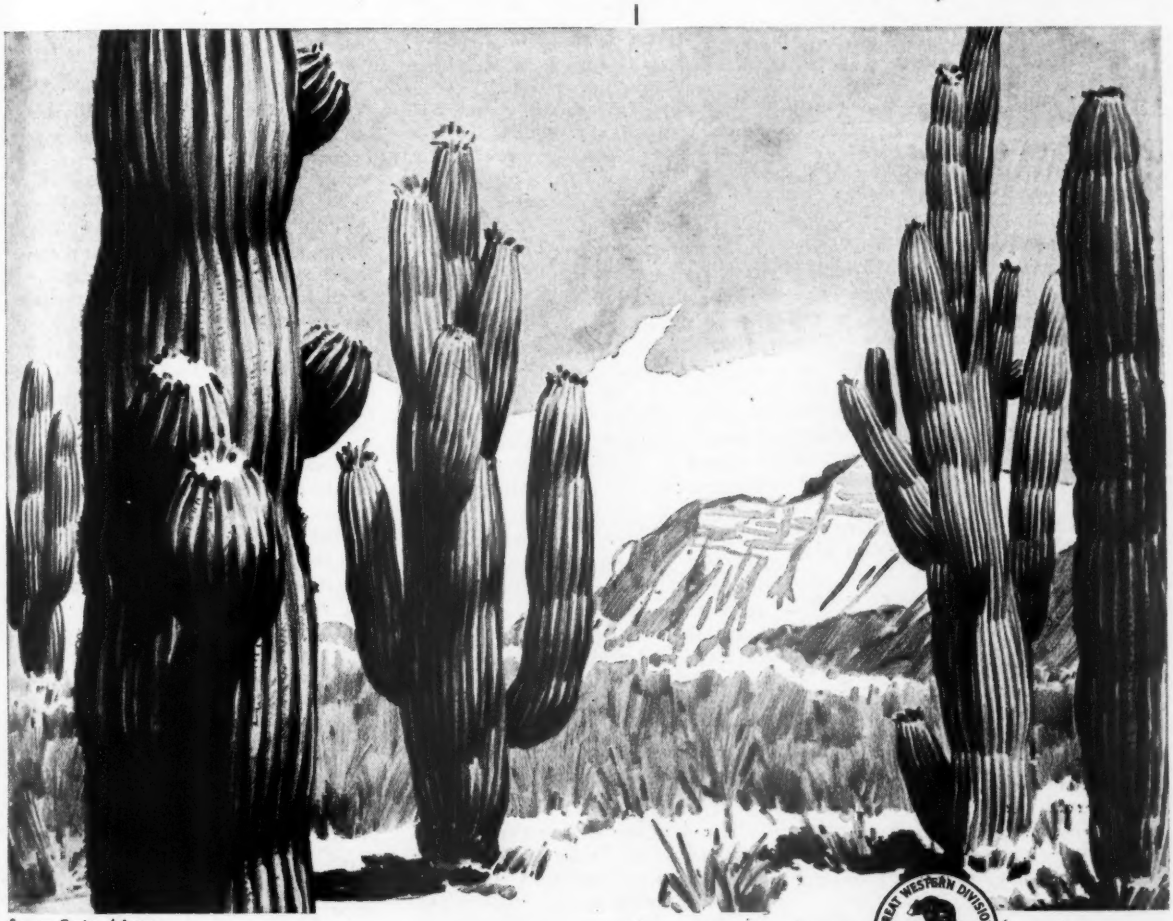

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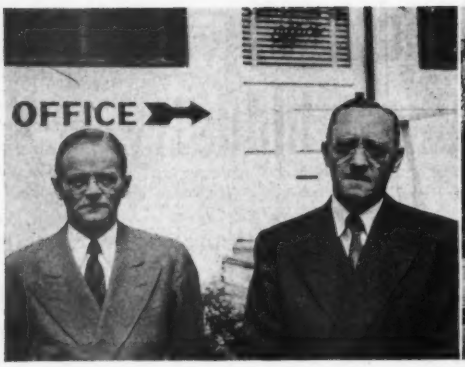


LLOYD RICHES (left), Vice President and General Manager, and H. R. Woodward, Assistant Manager in Charge of Production, in front of the office of Western Paper Converting Co., Salem, Ore. To the right is exterior view of Western Paper Converting Office and shipping room.

More Western-Made Paper Will Be Converted In the West In New Era of Peace

NOW that the war is over it is expected that more and more of the pulp and paper produced in the Far West will be converted in the Far West.

When one considers the vast paper production of the Pacific Northwest mills, it is difficult to visualize this production in use. One company in the west, pioneering in the conversion field, is at Salem, Ore. This is the plant of Western Paper Converting Co., a sizeable institution as it is, but one which is waiting for release of materials to add a building almost as large as the space it now occupies.

Western Paper Converting Co. has been in business since 1926, and is the only plant of its exact type in the Pacific Northwest. Some other plants exist where paper is converted into specialty products within the limits of the paper producing plant itself or an affiliated or parent company. But the Salem plant is an entity in itself, existing to produce principal products in two separate lines. Of its output, 75% consists of a full line of school, commercial and home stationery. The remaining 25% includes specialty bags and wrappers for primary packaging, principally in the food field.

Besides the main plant at Front and D Streets, Salem, Ore., a small branch operating as a specialty bag factory is situated in Los Angeles, Calif., at 733 Scries Ave. The entire company is home-owned, with Douglas S. Walton as president (no longer active), Lloyd Riches as vice president and general manager, and H. R. Woodward as assistant manager in charge of production.

The company already prides itself upon accumulated records of service. A 1944 census showed that 35 of the 150 people employed at Salem have served an average of 12 years. Further, 78 of the employes have worked for five years or more for the company.

The bulk of raw materials comes from Pacific Coast mills, with purchases unconfined to any particular mill or group. However, because of its convenient location, the Oregon Pulp and Paper Co., at Salem, supplies the larger percentage of the converter's needs. A great volume of newsprint is also handled.

The company owns a four-acre tract of land on the river at Salem where it operates in a concrete structure of 50,000 sq. ft. floor space. Its postwar building will contain an additional 40,000 sq. ft. The land for this construction is already cleared. A spur track of the Southern Pacific lies along one side of the present building and is conveniently placed for the new structure. Street access also permits shipping by truck.

The first line of business, that is, production of tablets, note books, and bound or unbound stationery, runs to popular grades such as pencil pads, linen and other papers. Machines necessary to the output, since it constitutes 75% of Western Paper Converting's products, occupy a great deal of space. First, there are the ruling machines, all MacAdams, which cut, count and rule both sides or one side. Four of these are disc ruling machines, with one pen ruling machine for more intricate work. After this there is the matter of gathering blotters, covers and backs after the stock comes fom the ruling machine into stacks of individual items on their way to the trimming machines. Here, on the first trimming, the large sheets are split in lengths, and then the lengthy narrow stock is trimmed to individual sizes and the stock goes on for sewing, padding, glueing and binding. A Seybold precision automatic trimmer is used.

The company does all its printing, from the turning out of embossed tablet covers to a four-color analine press for wrapping paper printing. The company operates a three-color Kidder press for the printing of food labels, tablet covers, etc., and two Meihle presses, as five small bag printing and bag making machines, made by Potdevin Machine Co. Much of the paper which runs through these bag-making machines is glassine. Three similar machines operate in Los Angeles.

The printing is all done from moulded rubber plates made on the company premises. The company decided the rubber affinity for ink gives better impressions, there is more ink deposited upon paper for imprint, and rubber type gives longer runs than other material.

Another department turns out business machine rolls. The company is also specializing in fine grades of air mail stationery.

As soon as the new building is completed, Mr. Riches says the entire plant is to be put on production line with conveyors carrying the

stock from start to finish so that no paper will touch the floor from the time it starts over the first production machine until it is shipped.

New Cellulose Derivatives Forecast by A. J. Hall

Probable development of numerous types of wood cellulose derivatives beyond those now in use is expected by Dr. J. A. Hall, director of the Pacific Northwest Forest and Range Experiment station, who recently assumed this post in Portland, Ore.

Describing the Pacific Northwest as a high producing pulp area, he queried, "Is it not time to begin to develop cellulose derivatives and cellulose products industries?" Then he answered the question by saying rapid expansions in the field would follow establishment of needed chemical plants to manufacture carbon bisulphide, sulphuric acid, nitric acid and other agents.

Dr. Hall devoted much of his time since 1942, while chief bio-chemist for the Forest Service in Washington, D. C., to the general field of chemical utilization of wood for war.

"The industry is, I think, greatly interested in learning to what use lignin can be put," he said. "Lignin comprises about 25 per cent of wood. So far we know little about this by-product, aside from certain knowledge that its properties vary as the respective methods of chemical wood conversion vary. One might say lignin has no practical chemical formula, although several theoretical formulae have been set down."

He said that sulphate lignin lends itself to use in impregnation of wood processes, and to making of compressed paper products. Lignin from sulphite pulping is being extensively employed in plastic mouldings. Alkaline lignins from the soda process have some plastic uses.

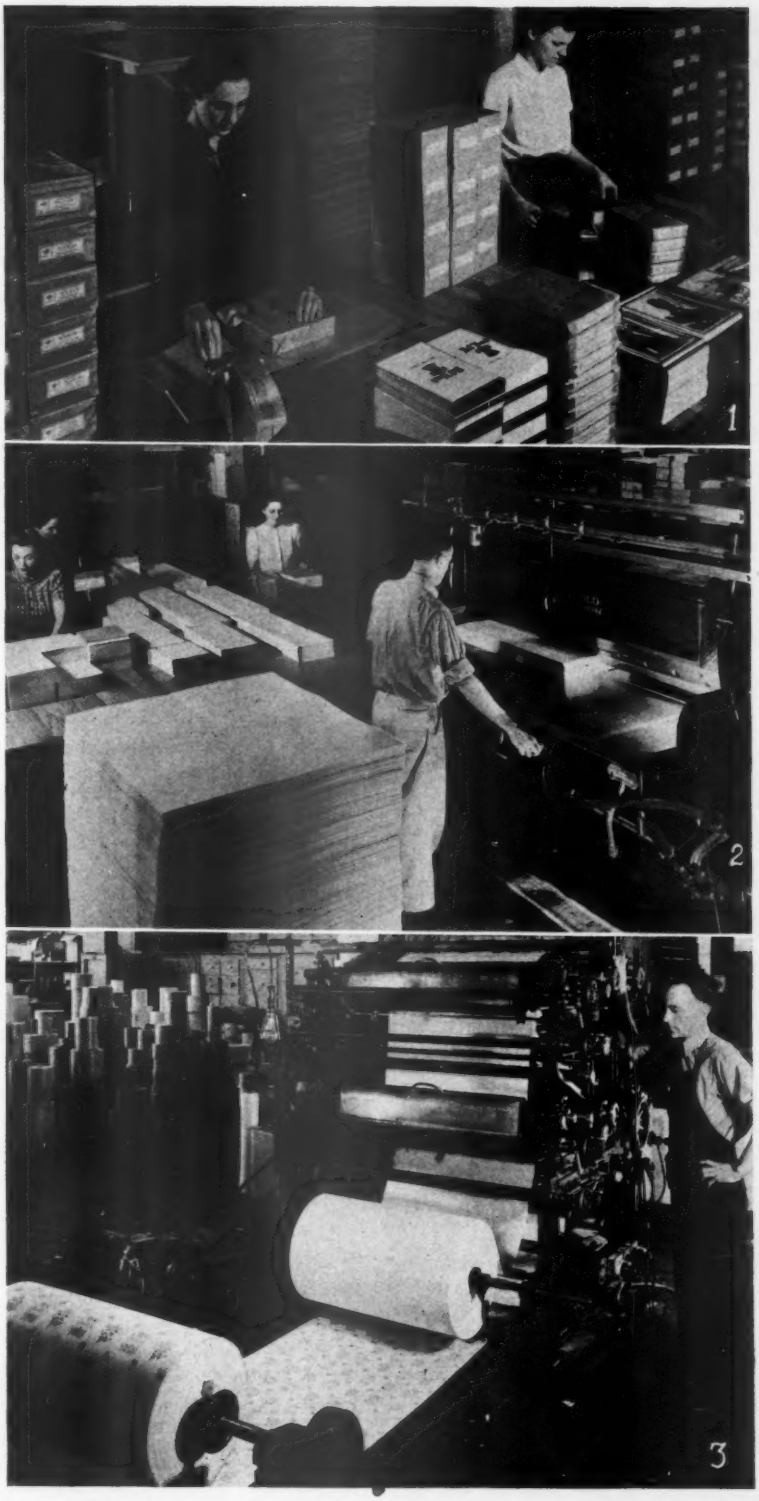
The problem of lignin is of such magnitude that it warrants unlimited expenditure in research," he said.

Who Wants to Make Pulp in Surinam?

A Department of Commerce report says any company desiring to utilize wood resources for pulp manufacture in Surinam, a Dutch colony in South America, would receive official assistance.

Sufficient raw material appears available to Surinam to justify further investigation into the possibility of establishing a domesic pulp industry, it is claimed. More than 200 varieties of trees and shrubs in the colony have been classified and there are doubtless many others.

Possentrie, Baboentrie, and Wallaba are considered particularly suitable for pulp because of their occurrence in large stands, their location relatively near water transportation, and other favorable factors. Possentrie, which is found in almost pure stands, is probably the outstanding wood for pulp production. If logged on a large scale, costs would be about $0.347 per cubic foot, compared with $0.738 for yellow pine in the United States. Baboentrie is well distributed over the northern part of Surinam.



EQUIPMENT AND VIEWS in Western Paper Converting Co.:

1—Part of the packaging department, where bound note books, tablets, etc., are packaged.

2—Seybold precision trimmer first cuts stock in long strips and later trims strips the other way for unit length.

3—Four-color analine press, turning out colorfully printed wrapping paper.

With 30 Years in Southern Mills As Background, W. W. Henderson Opens Engineering-Supply Office

After nearly three decades of experience within the Southern pulp and paper mill industry, William W. Henderson, now of Lufkin, Texas (Box 256), has established a sales and engineering service and, as rapidly as conditions permit will bring about the location of stockable items at strategic points within the area. Representation has been arranged with a number of well known manufacturers, and the line will be extended still further.

Organized as W. W. Henderson and Sons, the remaining members of the firm will become active in its affairs when their services in the armed forces will have been terminated.

Mr. Henderson recalls that the first sulphate mill in the South was built at Orange, Texas, in 1909; the second at Roanoke, in 1910; the third at Moss Point, Miss.; and the fourth, at Bogalusa, La. He was assistant to the late Col. W. H. Sullivan, general manager of the Great Southern Lumber Co., Bogalusa, La., in 1915, and when the Goodyear interests launched the Bogalusa Paper Co., he was active in connection with the erection of the mill in 1916-17. This concern is now the Gaylord Container Corp.

He remained there until 1920, at which time he became associated with R. J. Cullen and Lawrence H. Fox, organizers of the Bastrop Pulp & Paper Co. He participated in the building of the mill at Bastrop, La., and became its manager (1921-26), remaining after it was acquired by the International Paper Co. Mr. Cullen and associates built the Louisiana Pulp and Paper Company at Bastrop, and shortly afterward it was sold to International.

Upon formation of the Southern Kraft Division of the International Paper Co., which included the Louisiana mill, Mr. Henderson was sent to Camden, Ark., to participate in the building of the mill there in 1927-28. In July, 1928, he was sent to Mobile, Ala., for the construction of the unit there, becoming assistant to J. H. Friend. He retained his residence in Mobile in 1929 during the erection of the unit at Panama City, Fla., making visits to the site.

In 1935, after James H. Allen (now head of Pensacola, Florida, Pulp & Paper Co.) left the Southern Kraft Division, Mr. Henderson

WILLIAM W. HENDERSON, who has opened engineering office in Lufkin, Texas.

joined him in participation in the erection of the Union Bag and Paper mill at Savannah, Ga. Mr. Henderson remained with the plant for several years, during which time he made a study of southern pine groundwood experiments which were being made by the late Dr. Herty at his Savannah, Ga., laboratory.

Mr. Henderson has been engaged since 1939 in purchasing and safety work at Southland Paper Mills, Lufkin, leaving last May 15 to establish his own business. He maintains his contact on a consultant basis. He is a member of the National Safety Council and of the American Society of Safety Engineers.

He was instrumental in bringing about establishment through Texas A. & M. College of a course in pulp making, for which he wrote the text bock. He also was instructor for the classes, conducted at the Angelina Hotel in Lufkin. He also conducted ESMWT classes in industrial safety and industrial supervision.

Associated with Mr. Henderson will be his three sons. They are: William W. Henderson, Jr., a major in the Army Air Corps; Richard J. Henderson, a pilot in the Air Corps in the India-Burma-China theatre (one of the four C-47s shot down under him is shown burning in LIFE picture of June 26, 1944); and Joseph A. Henderson, a gunnery expert at a B-29 base in the Marianas. All three have had pulp and paper mill experience.

Mr. Henderson expects to establish headquarters at a centrally located point in the South, but is presently operating from Lufkin. Dealerships have been arranged already for some of the more easily stocked items.

"While the Southern pulp and paper industry has expanded rapidly to an important position," said Mr. Henderson, "the supply situation has not kept up. My slogan is 'Service in the South'."

Sales and service will be extended to the area including North Carolina, Tennessee, Arkansas, Texas, and the states south and east of those named. Lines on which Mr. Henderson has exclusive representation within the territory include:

The Horton Manufacturing Co., Minneapolis, Minn., makers of a line of variable speed clutch pulleys and governor control brakes.

E. D. Jones & Sons, manufacturers of beaters, jordans, screens, dusters for paper stock, and accessories.

Wood Treating Chemical Co., St. Louis, Mo, producers of "Noxtane" chemicals for slime and algae control, and salt cake. This company is allied with Monsanto Chemical Co., for which it is sales agent on certain chemicals.

Wisconsin Wire Works, Appleton, Wis., makers of fourdrinier wires, cylinder and decker wires.

The DeZurik Shower Co., Sartell, Minn., makers of showers, stock regulators, trim squirts, strainers, plug valves, and special steel globe. gate and angle valves developed for the Navy and Coast Guard.

Brandon Drier Felts, made by Brandon Mills, Greenville, S. C., for which Mr. Henderson has the southern territory through Woodward, Baldwin Company, Baltimore, sales agent for the company.

North Wales Plans Industry Expansion

Further development of the paper industry in North Wales in the postwar era is envisaged by the businessmen of that region as a natural outcome of the program which has been carried out by the United Kingdom's Forestry Commission over a period of years.

To date the Commission has planted 31,959 acres in North Wales to conifers, and an additional 24,538 acres of the 79,786 acquired by the Commission are considered plantable.

The North Wales postwar development committee believes that the young trees which are thinned out each year might form the basis for an expanded pulp and paper industry.

From them could come the raw material for wood pulp, newsprint and other paper, and wall boards, as well as rayon and wood wool used extensively in the aircraft industry. At present there are two paper mills in Flintshire.

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Among the things that Mr. and Mrs. Consumer may look forward to will be new surprises in frozen foods. For new ways have been found to capture and hold that garden-fresh flavor of vegetables and fruits—and the unique savour of meats and fish. But one of the most interesting of the surprises will be the packages in which these foods will come. Look at the inner wrapper. Now ... it is "high wet-strength" paper—paper that is extra strong when dry and will not lose its strength and fall apart even when soaking wet! Thus it gives a new measure of protection to foods ... new convenience to the user ... a real selling feature for the producer and retailer ... *and a new profitable specialty for paper-makers!*

"High wet-strength" paper, which is also "wet-rub resistant", is now made by the use of a special synthetic resin developed in the Cyanamid Research Laboratories. Called PAREZ** 607 this resin imparts improved wet-and-dry strength to any type of paper, from paper-board to fine tissue, simply by adding the resin prepared under Cyanamid's patents in the regular paper manufacturing process. As a result, paper is today doing many of its old jobs better and also many entirely new jobs. Cyanamid's Paper Technicians are prepared to work with paper manufacturers interested in the proven potentialities of PAREZ to make paper do many of its old jobs better and find new fields of usefulness in serving your product and packaging paper needs.

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Multi-Wall Bags
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TIMELY PEACE-TIME PRODUCT IDEAS...

Shopping Bags
Ice Cream Containers
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Frozen Foods
Shipping Labels & Tags
Twisting Papers
Coating Raw Stocks

*Reg. U. S. Pat. Off.

**Trade-mark of American Cyanamid and Chemical Corporation applied to its synthetic resins for use by the paper industry. The processes under which PAREZ is applied in the production of wet-strength paper are covered by U. S. Patents Nos. 2,291,079; 2,291,080 and 2,345,543 and U. S. Patent Application Serial No. 435,032.

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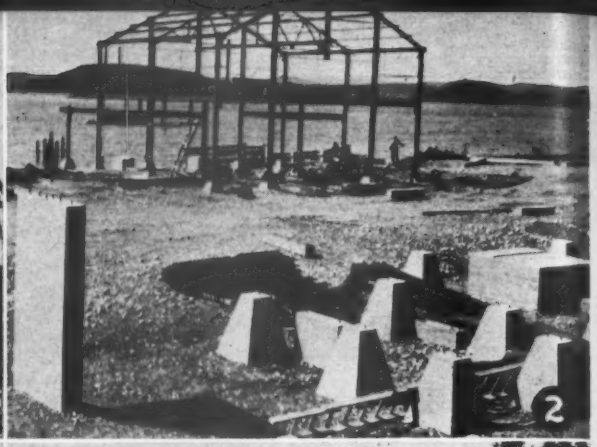


LATEST SCENES AT MARATHON, ONT., shown on opposite page:

1. Structural steel is up for the machine room.

2. Framework for log-haul and slasher building is up. In foreground are conveyor footings at the barking drums.

3. Three 12 ft. by 45 ft. American barking drums, supplied by Horton Iron & Steel Works, Fort Erie, Ontario.

4. The Dominion Bank, which opened for business October 1. A picture of the new hotel was shown in our August, 1945, issue (page 45).

5. Sheet steel pilings are being driven for the pumphouse cofferdam.

6. The southwest corner of the mill building during construction.

7. Note the concrete pedestal piles for the mill foundation, shown in this picture.

There are 2,500 piles used. They range in length from 8 to 54 ft. and are driven through sand to solid rock. Each one is designed to carry 40 tons. This installation is by Western Foundation Co., Chicago.

Forestry To Be Taught In East Texas College

A forestry department is part of the curriculum of Stephen A. Austin State College, which opens its term this month at Nacogdoches, Texas. This is in the heart of East Texas timberlands which offer future wood supply for several pulp and paper mills of South Central U. S. Nearby is the Southland Paper Mills, at Herty, Texas.

Timber industries of the region had sought a new school department. Transfer of Farm Security Administration farmland near Nacogdoches to the U. S. forest reserve opened the way for establishment of the department.

Pictures Show Progress at Marathon

ANOTHER progress report in pictures of the new Marathon Paper Mills of Canada, Ltd., the 300-ton-a-day bleached sulphate pulp mill which is being built at Marathon, Ontario, is shown on the opposite page.

These are views taken during the past month.

This is the third successive on-the-spot report on the new Marathon mill brought to readers of PULP & PAPER INDUSTRY. In the September issue we presented a complete process flow sheet of the new mill with a detailed description of the new equipment. In August, the report included number of pictures of top personnel and earlier views of the construction in progress.

Designed to be a low-cost producer and utilizing some of most recent and original equipment, this mill has interested pulp and paper executives throughout North America. PULP & PAPER INDUSTRY's Canadian editorial director personally visited the operations to obtain a first-hand report.

Niles M. Anderson, vice president and general manager, expects the new Marathon mill will start producing pulp next June. Housing is already up for installation of much of the machinery this winter.

Personnel Additions

Mr. Anderson announced additions to key personnel at the new pulp mill during the past month.

Dr. F. Kraft, A.I.Ch.E., M.E.I.C., P.E.Q., has joined the company as chief chemist. Dr. Kraft has been associated with the high grade dissolving pulp industry for the past 20 years. He recently spent two years studying the industry in the South, on the Pacific Coast and in Scandinavia.

W. E. Wright, B.Sc., is the new townsite superintendent. His entire experience has been in the construction industry. He specialized in design and building of the class of modern family accommodations, business buildings and services under construction in the Marathon townsite.

W. B. Crombie, engineer, and S. M. Hodder, an architect on the staff at Marathon, have left Marathon. E. A. Butler has succeeded Mr. Hodder. Engineers assisting Mr. Anderson include Neville Beaton, his assistant; Grant Ross, chief engineer of the mill, Roy Emery, assistant chief engineer, and Harry Stafford, electrical engineer. Einar Walloe is general superintendent.

Frozen Food Packager Developed by Marathon

A frozen food packaging machine which automatically feeds, opens, fills and closes a carton and attains a speed of 75 to 80 twelve-ounce vegetable packages per minute, is a joint development of Marathon Corp., Rothschild, Wis., and Food Machinery Corp.

The sequence of operations on the F. M. C.-Marathon packer is as follows: cartons are fed from a magazine and ejected into automatic opener which opens and sets them up. After being opened they are fed along a conveyor into the filling unit. The free-flowing foods are fed into a hopper and then into adjustable volumetric pockets. The correct volume is dropped into the carton beneath the pocket and the cartons are then carried away from the filler through a device which automatically closes the carton. From this station the carton is fed into the over-wrapping machine for the final operation.

MAURICE BRESNAHAN (left), who recently retired as Beater Engineer of Parsons Paper Co., Holyoke, Mass., after 45 years in its employ, receives a farewell war bond present from HENRY V. BURGEE, Vice President and General Manager of the fine papers mill. Mr. Bresnahan, 77, was born in County Kerry, Ireland, and came to the U. S. at the age of 17. He worked in other Connecticut Valley mills before joining Parsons.

Labor Situation Is Still Stewing, Logging Strike Threatens Pulp Supply

The most important fact about the stewing labor situation in the United States in early October was that it was utterly unpredictable.

This is hardly a healthy condition for any business, big or small, but very few industry leaders were able to look very far ahead.

The most critical situation in the pulp and paper industry was the American Federation of Labor strike of loggers from mid-California to Canada and as far east as Montana, which already was cutting into log supplies of some of the major pulp and paper mills.

These mills in October had the lowest inventories for that period in some 15 years—some were already down to a critical supply for only a limited number of days. A protracted strike, plus a later interruption of logging by winter weather, could cause one of the worst situations in pulp supply on record. Normally, one-quarter of the U. S. pulp supply is produced on the West Coast.

In the first week of October, it appeared a toss-up whether the CIO unions would join in the strike. The AFL had pulled some 60,000 men off logging and lumbering operations. The CIO had already voted their officers authority for a strike that could pull off another 40,000. If the CIO struck, this probably would mean a strike of affiliated Inland Boatmen and this would prevent deliveries of logs to either sawmills or pulpmills. In the Far West, the use of hemlock or spruce for pulp or sawtimber is usually not decided until it reaches headrigs of mills or at least some time after it is boomed.

Those betting the CIO would not strike were banking on a decision by the CIO to await its October 8 meeting with the U. S. Conciliation Service and to take time after that to consider a possible compromise.

If the CIO negotiated a settlement peacefully, such action probably would torpedo the AFL strike. The CIO was asking for a 25 cents an hour increase to $1.15 and could possibly win a portion of this demand. The AFL was striking for a 20 cent increase to $1.10.

There were some CIO jurisdictional strikes in isolated mills on the West Coast which would confuse the laymen, trying to make sense from press reports of the developments.

Mill Negotiations

The AFL pulp and paper mill unions on the Pacific Coast and the Pacific Coast Association of Pulp & Paper Manufacturers participated in a panel hearing of the War Labor Board in Seattle on Sept. 21 concerning the unions' request for a 20% increase in pay for a 40 hour week, to take effect in the event of a roll-back from the 48-hour week.

The question was put up to the War Labor Board for its action, but the unions made the reservation that they could not accept any decisions by the Board without a vote of membership. The Manufacturers Association promptly claimed its right to a similar reservation.

However, discussion of a 40-hour week was purely academic in mid-October as far as some of the biggest Pacific Coast pulp and paper mills were concerned. They still were facing shortages of labor as critical as any during the war, with some of their men and crews working 56 or 52 hours as well as 48 hours.

Despite the fact that the big Pacific Coast shipyards and aircraft plants were letting out tens of thousands of workers, these were either still "vacationing" or "shopping" for war wages or had returned to mid-west or eastern homes and jobs.

Eastern Labor Situation Worsens

The Labor situation in Northeastern U. S. pulp and paper mills had worsened since last month's report in this magazine.

Many mills had their paper machines or coaters down due to lack of employes.

Although shipyards in Portland, Maine, released upwards of 20,000 workers, a paper mill 50 miles distant got only four of these.

Standard gag in New England: "Where are the unemployed?"

Answer: "Temporarily at the Boston Statler."

Paper mill executives were becoming irked at newspaper stories of unemployment because they had plenty of jobs to offer.

The WPB, in one of its near-last gasps, urged a campaign to woo men back into the cutting of pulpwood. It didn't say how this could be accomplished, however.

Moffitt Directs Production and Sales Of New Weyerhaeuser Products

Thomas E. Moffitt, who has taken a leading role for many years in the activities of pulp and paper and chemical industries of the Pacific Northwest, has joined the Weyerhaeuser Timber Company as manager for certain wood-base products brought forth by the company's development department at Longview, Washington.

His appointment is announced by Charles H. Ingram, general manager of the company, whose offices are in Tacoma, Washington.

This department, with a modern, two-story laboratory, was established in 1942, and has a staff of more than 30 persons working under Clark C. Heritage, one time national president of TAPPI.

At present, there are two products being marketed — both developed in the same process. These are a range of thermosetting hot compression molding compounds of phenolic nature and an extender for plywood glues.

However, this is hardly an indication in itself of the broad field of research assigned by the Weyerhaeuser Company to this development department. It has been given the extensive technical field of dealing with any and all new utilization of standing forests, whether as structural products, fiber or fibrous products, chemicals and products therefrom, and plastics materials.

THOMAS E. MOFFITT, who has joined Weyerhaeuser Timber Co., as Sales executive for new products.

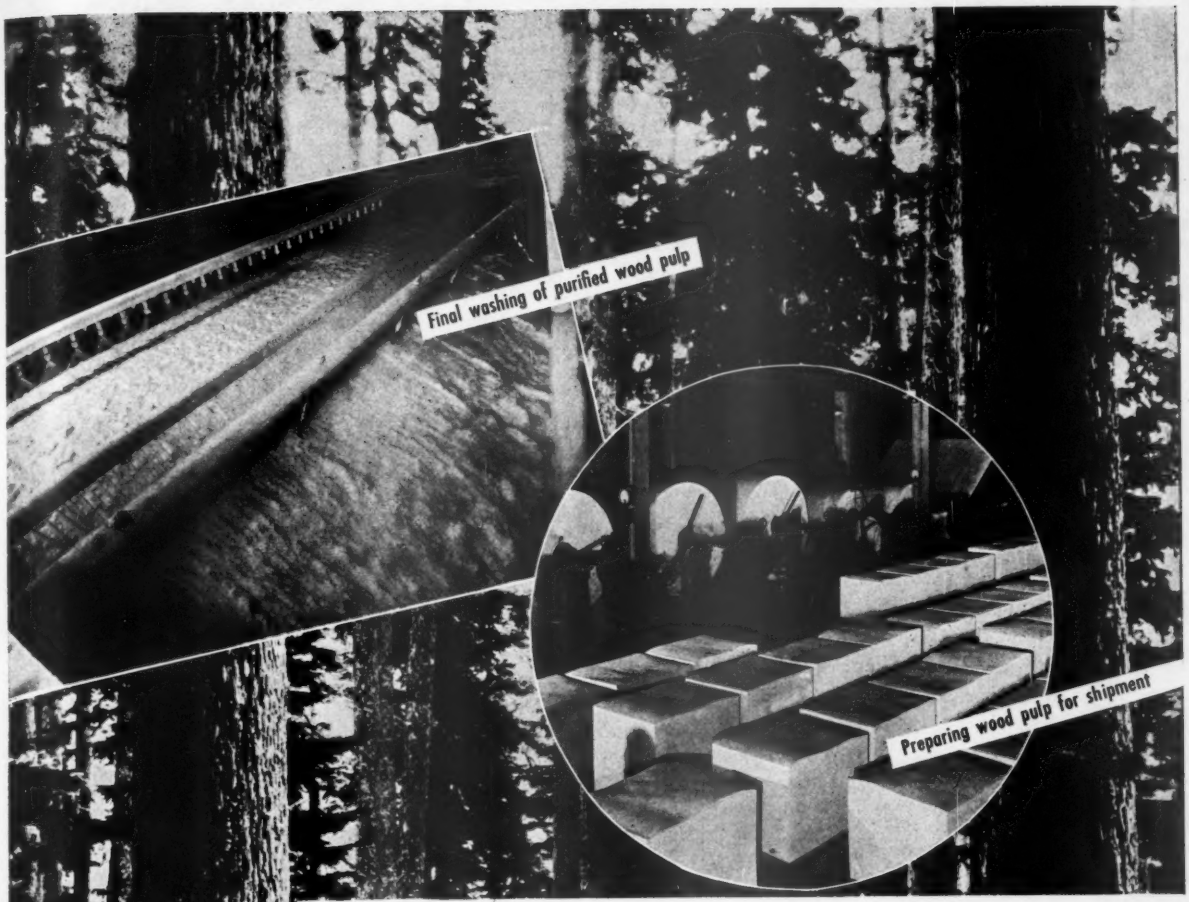
This, of course, is not an entirely new enterprise for Weyerhaeuser Timber Company, as it began attacking the problem of closer utilization of forest resources more than a quarter of a century ago.

Mr. Moffitt has personally given much of his time to a study of various aspects of this paramount problem of the timber-using industries, particularly in the chemical field.

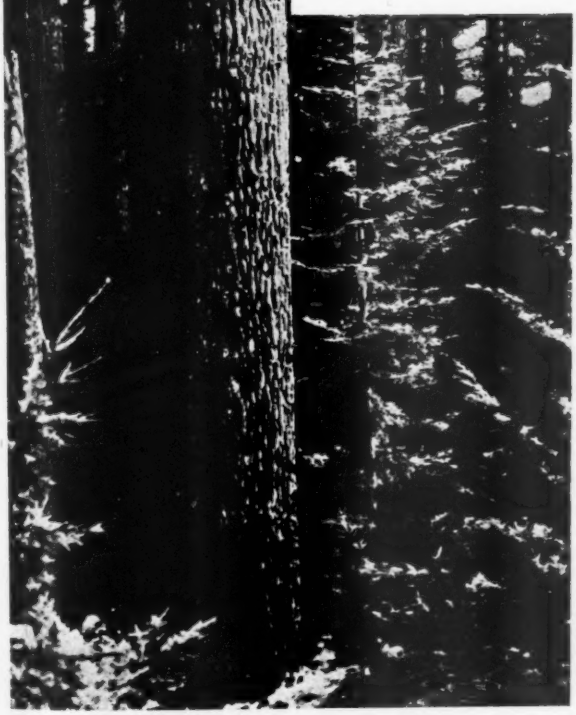
After a term of service as a captain in the U. S. Army early in the war, he returned to the Hooker Electrochemical Company, Tacoma, Washington, as acting Western sales manager while Albert Hooker went to England on a military assignment. Mr. Moffitt had been a sales representative of this company for many years and also served for a short time in the organization of Laucks, Inc.

B. C. Official

J. N. Findley, for 18 years with the Sidney Roofing & Paper Co., has taken over the management of the B. C. Roofers Agencies, Victoria, B. C.



WOODPULP–THE PRIMARY SOURCE OF RAYON



More than three-fourths of all cellulose consumed by the rayon industry consists of highly refined wood pulp. As the leading producer of this highly specialized raw material, Rayonier devotes its technical efforts, in war and in peace, to the development of new forms of cellulose to benefit mankind.

This program includes the maintenance of the highest standards of present-day wood pulp qualities, the development of pulps for new uses, and the improvement of present pulps.

The company's research laboratory is staffed by men of broad experience and outlook who are capable of providing the highest quality products and service. Close collaboration with customers on their individual problems is the guiding influence in all of our activities.

Uniform quality, a feature of Rayonier pulps, has been obtained by special processes and equipment, knowledge of the required properties and careful control of operations. That is why Rayonier pulps are the best today — why they will be even better tomorrow.

RAYONIER
INCORPORATED

Sales and Executive Offices: 122 East 42nd Street, New York 17, N.Y.
Mills: Hoquiam, Port Angeles and Shelton, Wash., and Fernandina, Fla.

EDW. B. VAUGHAN, formerly Southern Sales Rep. for Southern Kraft Div., Int. Paper Co., has joined Bulkley, Dunton Pulp Co. sales staff, it is announced by President Fred Enders. Mr. Vaughan, native of Mobile, now lives in Larchmont, N. Y.

ARNOLD G. BROWN, promoted from Asst. Mgr. to Manager of Pump Div., Fairbanks, Morse & Co. Graduate of Syracuse U., he was student in F-M's Beloit plant and has been in executive positions since 1922.

GORDON M. GIRDWOOD, moves from Chicago to Oakland, Calif., to be Engineering Field Representative, Oliver United Filters, Inc.

LIEUT. WM. E. FLATEBOE, USN, won Distinguished Flying Cross for direct hit on Jap battleship. He is son of Einar Flateboe, Pres., Sumner Iron Works, Everett, Wash.

Mr. and Mrs. Russell LeRoux Arrive At Rhinelander

Russell J. LeRoux, assistant to the president and director of sales, Rhinelander Paper Co., will arrive with Mrs. LeRoux in Rhinelander, Wis., Oct. 31 to take up his new duties.

The former manager of the Everett, Wash., pulp mill of Weyerhaeuser Timber Co., and his wife drove east by way of Spokane, Missoula, Miles City, etc. They left Everett the morning of Sept. 21 and made the trip in easy stages, including visits in Brainerd, Minn., with Mr. LeRoux's parents. His father is mill manager of Northwest Paper Co. there. Later they visited Mrs. LeRoux's family in Wisconsin Rapids, Wis.

Gerald F. Alcorn succeeded Mr. Le Roux as manager of the Everett mill.

Industry Men Return From Europe

Some of the industry men assigned to duty in Europe on the Army project to revive paper production announced for the first time in the October PULP & PAPER INDUSTRY have returned to their posts in the U. S.

Still in Europe as this issue went to press was George A. Balko, Mead Corp., Chillicothe, Ohio.

Among those who have returned are C. A. Grondona, of Crown Zellerbach Corp., New York, Ernest Mahler, executive vice president of Kimberly-Clark Corp., Neenah, Wis., and Arthur Wakeman of the same company and one-time director of the pulp and paper division of WPB.

Mackenzie, Shoudy and Jones Win Prizes

The nationwide essay contest for 1945 sponsored by the American Pulp & Paper Mill Superintendents Association has been won by Kenneth J. MacKenzie, assistant superintendent, Paper Mills, Eastman Kodak Co., Rochester, N. Y. He was awarded a $500 war bond.

Second prize, $300 in bonds, went to Charles A. Shoudy, paper mill superintendent, West Virginia Pulp & Paper Co., Charleston, S. C., and third, $200 in bonds, to Edward T. Jones, with Charles T. Main, Inc., Boston.

Essays were on labor relations ideas and the contest was arranged through a New England machinery mnufacturer.

Daughter Joins Family Of Lt. Col. Wollenberg

There are now four in the family of Lieut. Col. Richard P. Wollenberg, of Headquarters, Air Technical Service Command, Wright Field, Dayton, Ohio, who before entering the service was engineer at Longview Fibre Co., Longview, Wash.

A daughter, Bonney Lee, was born to Col. and Mrs. Wollenberg in July to help them keep their two-year-old son in line. And that makes H. L. Wollenberg, president of Longview Fibre, twice a grandfather.

His younger son, Lieut. James Roger Wollenberg, who joined the navy after graduating from law school at the U. of California, was still plying the Pacific last month as gunnery officer on a big transport.

Competition Foreseen For Argentine Market

Competition for a postwar newsprint market of upwards of 120,000 tons annually in Argentina will be mainly between Canada and Scandinavia, predicts J. A. Strong, Canadian commercial attache in Buenos Aires. There is no newsprint made in Argentina.

Mr. Strong said more than half of Canadian exports to Argentina are newsprint.

Concerning pulp, he said:

"The Argentine paper industry consumes more than 40,000 tons of imported wood pulp annually. Some domestic wood pulp comes from plantations of poplar in the delta of the River Plate and there is a large local production of cellulose from wheat and flax straw; but there will be a continued demand for imported wood pulp at around the current level of consumption. Sweden has been the main supplier. Canadian mills have never had an important share.

"Argentina has a large rayon plant. The wood pulp for its use has been supplied from the United States, although some shipments have come recently from Sweden.

"Argentina imports heavy weight kraft paper from Sweden and Canada, for making lime, cement and other bags. Local mills produce the lighter weights.

"Local mills supply about 75 per cent of domestic consumption needs in all papers and paperboard except newsprint. The United Kingdom is an important supplier of quality papers for special purposes."

ARGENTINE IMPORTS OF NEWSPRINT

	In Short Tons		
	1938	1942	1943
Canada	39,765	43,877	45,856
Newf'd.	.....	6,378	17,504
U. S.	.....	1,414	1,127
Finland	49,315	.....	217
Norway	22,041	.....	.....
Sweden	18,887	32,444	52,751
Germany	8,770	.....	.....
Others	468	.....	.....
Total	139,246	84,113	117,455

Swedish Pulp Imports

Swedish pulp imports by the United States have been arriving more slowly than many had anticipated. Very little bleached pulp has arrived.

Imports of Swedish Pulp (June 25-Sept. 14)

	Short Tons	Value
Ground wood, unbleached	4,667	$ 174,407
Sulphite, unbleached	62,565	3,963,101
Sulphate, unbleached	63,806	4,056,769
Sulphite, other than rayon and special grades, bleached	12,924	961,880
Sulphite, rayon and special grades, bleached	3,244	307,130
Sulphate, bleached	5,663	424,367
Grand Total	152,869	$9,887,654

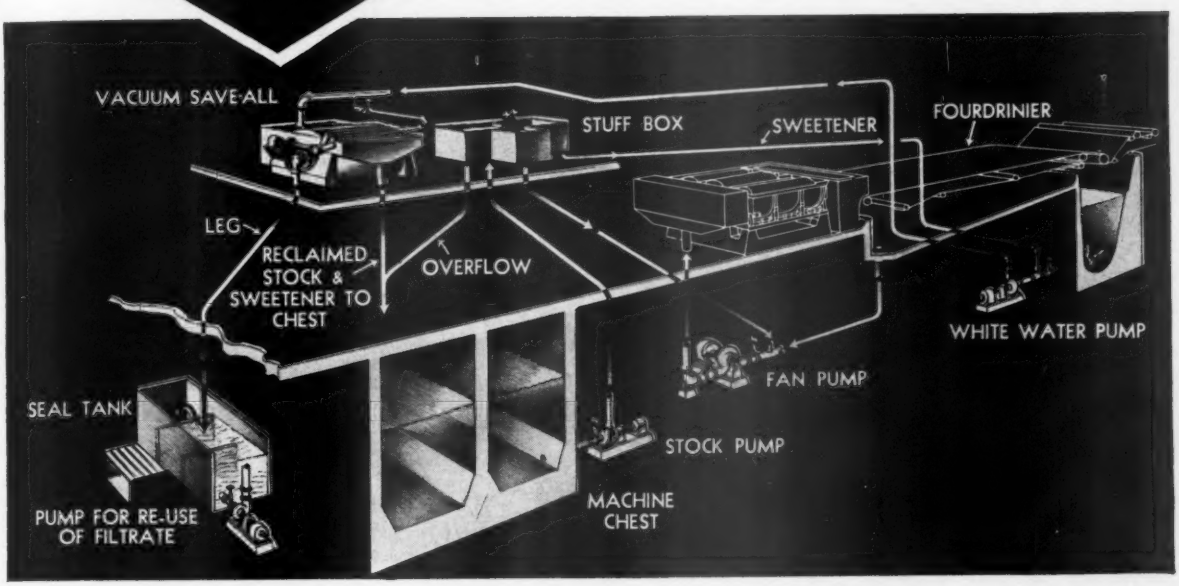
Source: Bureau of the Census.

Container Corp. Adds To Wabash Mill

The Container Corp. of America, with headquarters in Chicago, Ill., has plans under way for a new addition to the power plant at its board mill in Wabash, Ind., including complete modernization of the present station.

IMPCO Vacuum SAVE-ALLS

–Rescue precious fibre
–End the nuisance of stream pollution



A typical Impco Vacuum Save-all System

IMPCO Vacuum Save-all systems recover as high as 95% of all white water solids, with filtrates as low as 0.2 lbs. per thousand gallons—depending on the grade of pulp.

The recovered fibre can be returned immediately as pulp furnish through the machine chest — appearing directly as additional paper tonnage—and without being graded as lower quality pulp.

In planning a Save-all system it is important to base the Save-all size upon individual tests for each paper machine.

We will gladly have an engineer call, run the tests and evaluate the savings which can be effected by our Save-alls.

Improved IMPCO

PAPER MACHINERY CORPORATION

NASHUA, NEW HAMPSHIRE

Positions Wanted by Veterans of World War II

"And so, my fellow countrymen, I report to you that your sons and daughters have served you well and faithfully . . . They are homeward bound . . . Take care of them."—General Douglas MacArthur.

With this issue, PULP & PAPER INDUSTRY will begin publishing—without charge—the "classified advertisements" of bona fide ex-service men and women who have served in any of the armed services of the United States and Canada. We do this in no sense as a repayment for what they have done for us — but merely as a small courtesy which we hope will be of assistance both to them and to the pulp and paper mills of North America. We will welcome the inquiries of these "veterans" for executive, supervisory, technical or engineering positions. Their names and addresses will be confidential. We offer to write their "ads" for them on the basis of their letters.

WANTED: Position as chem. engineer. Desires Pacific Coast connection. Grad. U. of Mich. Seven yrs. with heavy chemical manuf. in engineering, research, production; two years supvr. in manganese plant; one year cellulose products. Box B.

WANTED: Sales position on Pacific Coast. Just returned from 2 years as Seabees officer in Pacific War Theater. Previously was sales executive for prominent Wisconsin and South pulp and paper companies; many years' experience meeting convertors and distributors. Reply Box C.

WANTED: Position in industrial engineering, purchasing, production control or planning. Discharge from army air corps imminent. Rag-weed allergy requires move from midwest; favors Pacific Coast opportunity. Experience: five years in aircraft industry, operated mercantile business, purchasing agent, production supvr. Box A.

NOTE: This department is launched without any previous publicity and fanfare and there were only three inquiries at hand for this issue. We welcome more.

SERVICE MEN'S SUBSCRIPTIONS

In ordering subscriptions for service men overseas, please attach his original written request to your subscription order. Postal regulations require publishers to present original request for their examination on renewal orders as well as new subscription—before the publisher can start or renew the subscription.

Classified Advertising

WANTED — For Pulp and Paper Mill, Licensed Steam Engineer, one familiar with the firing of sawmill refuse and one capable of supervising maintenance and operation. Apply in own hand writing stating experience, references and salary wanted. Reply Box 11, Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

WANTED: GENERAL LOGGING SUPERINTENDENT FOR MEXICO

Must be technically trained, experienced in pulp mill supply, capable of supervising extensive pulp wood operations in mountainous and rough country and of locating and supervising construction of truck roads. Address reply to Box 16, Pulp and Paper Industry, 71 Columbia, Seattle 4, Wash.

B. C. TIMBER FOR SALE

Owner is offering approx. 550 million feet British Columbia license timber. Not in one tract but all in one general district, and all directly tributary to tidewater. Cruise shows, 13% Fir; 17% Cedar; 12% Spruce; 42% Hemlock; 16% Balsam. Owner wishes to deal with principals direct: no agents and no commissions. Price very reasonable. Box 17, c/o Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

MALE HELP WANTED — Project engineers and draftsmen. Pulp or Paper mill experience desirable but not essential. Attractive post war prospects. Submit full statement of education, experience, recent photograph. Reply Box 12, Pulp & Paper Industry, 71 Columbia Street, Seattle 4, Wash.

HELP WANTED: Old established southern California Mill has an opening for two experienced Beater Engineers. Write full particulars: Box 15, Pulp & Paper Industry, 71 Columbia, Seattle 4, Wash.

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WE INVITE CORRESPONDENCE WITH EMPLOYERS SEEKING EXECUTIVES AND EXECUTIVES SEEKING NEW POSITIONS.

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PAPER MILL DEPARTMENT
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BOSTON, MASS.

IDEAS WANTED . . .

IDEAS, INVENTIONS OR PATENTS FOR PULP MILL EQUIPMENT

One of our clients, a large manufacturer of heavy equipment, is interested in extending its activities in the pulp mill field. Accordingly, it solicits ideas, regardless of stage of development, that may lend themselves to new or improved processes or equipment applicable to pulp manufacture.

Those interested are invited to write to the undersigned stating type of process or equipment but not making any confidential disclosure. A form of agreement for making disclosures will then be supplied. **G. M. Basford Co., Dept. D, 60 E. 42nd Street, New York 17, N. Y.**

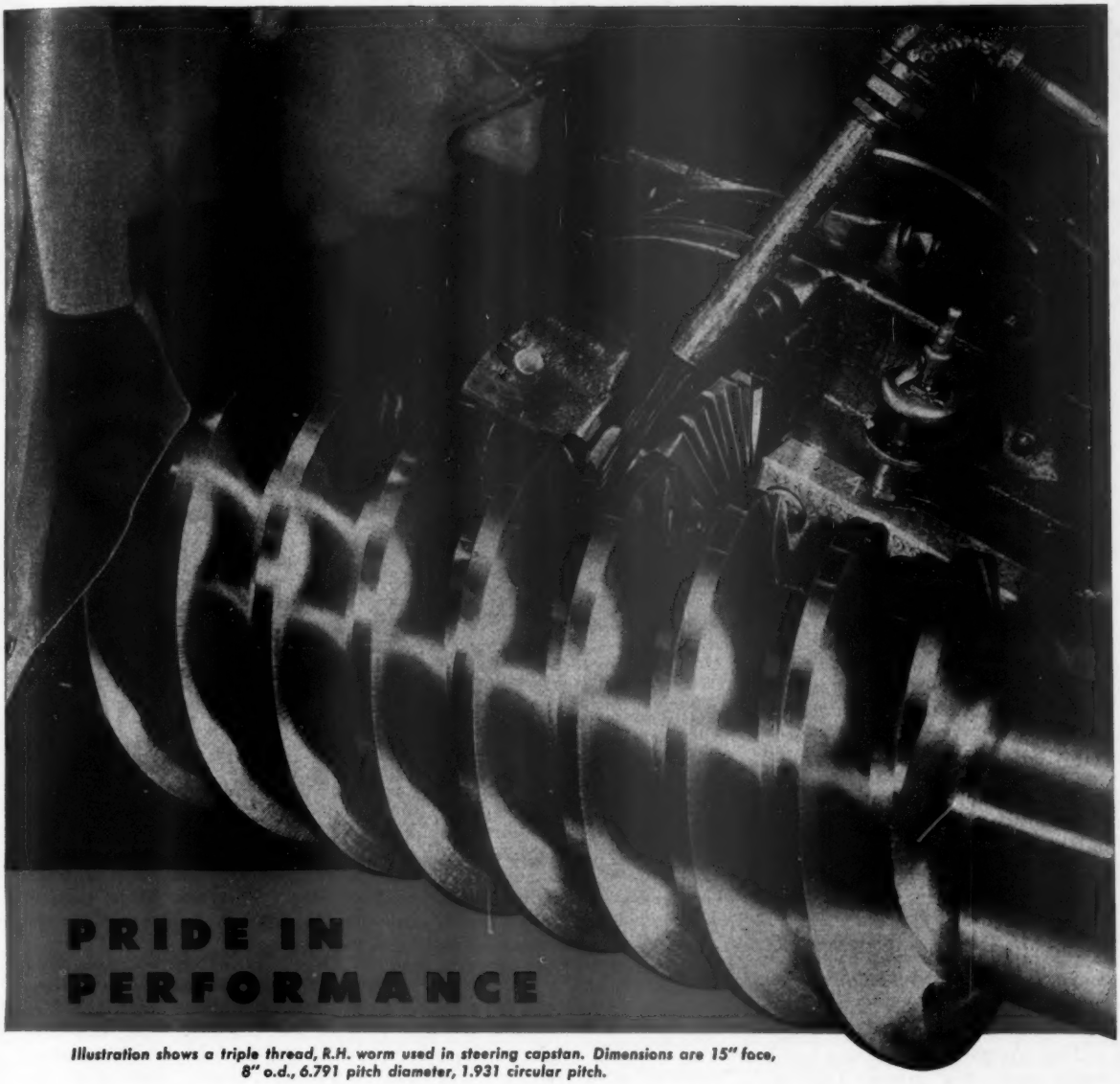

Illustration shows a triple thread, R.H. worm used in steering capstan. Dimensions are 15" face, 8" o.d., 6.791 pitch diameter, 1.931 circular pitch.

What it means to the LUMBER INDUSTRY

Cutting worms and gears is not a "cold" detail job when the mechanic takes pride in the performance of the finished unit. At Western Gear Works and Pacific Gear & Tool Works close tolerances are not considered as restrictions but as a challenge to the ingenuity and "KNOW HOW" of the operator. This spirit produces for the lumber industry, speed reducers and gearing mechanisms that are smooth running, highly efficient and give years of service with minimum attention and maintenance.

With Pacific-Western products "Pride in Performance" starts with the operator—not the salesman.

GEARMAKERS—and ENGINEERS

Pacific-Western manufacture a complete line of gears, speed reducers, vari-speed drives and special machinery for every mechanical power transmission need. Write, wire or phone nearest office for complete literature or engineering service.

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Lewis Bldg., Portland, Oregon
Los Angeles, Calif. – Lynwood, Calif

One of Oldest U. S. Paper Mills Shifts To Higher Grades--Brings Higher Prices

ONE of the oldest paper companies still operating in the United States — Knowlton Brothers, Watertown, N. Y. — has gradually moved away from the basic products on which it was founded to manufacture of paper specialties.

Thus, it has moved from grades which brought lower prices and were generally highly competitive to specialties which are of higher value and less competitive.

Paper has been made at this mill site on the Black River for 137 years. But the present management and highly skilled technical department, with an excellent laboratory workshop, are not the least bit old-fashioned in their ideas about papermaking.

The war, now over, provided a strong impetus to the trend toward specialty products in this company. Technical and industrial papers and absorbent papers for the army and other war purposes were made and were so highly specialized that strict secrecy was imposed by the government on the operations.

This mill, for many years, was also a producer of the familiar red and black photographic papers for Eastman Kodak Co., and now manufactures the same grade for other photographic manufacturers. It also makes other rag and sulphite colored specialties, as well as a composition board.

This is a far cry from the handmade paper first produced in the original mill on this site in 1808. In the early days a groundwood pulp was made here but pulp production was discontinued as wood supply in Northern New York became more scarce and the company devoted more attention to higher grades of paper.

Because of the many diversified products, pulp from all sections of the United States and Canada is purchased to meet special requirements.

G. Seymour Knowlton, chairman, and Theodore E. Knowlton, president, are the third generation of their family to be connected with the company. Already a fourth generation member has joined the officers, the latter's son — David C. Knowlton. He is now a vice president of the firm.

THEODORE E. KNOWLTON — his experiences have ranged from building a railroad in Alaska to the Presidency of historic family paper mill in Watertown, N. Y.

Chairman Knowlton has the longest service record of anyone in the organization — 63 years. But his younger brother, the president, went west as a young man and served many years as a railroad construction engineer before the family persuaded him to return home in 1932 and take charge of the paper-making industry.

Experience in Alaska

As a young engineer, Theodore Knowlton went west for the first time in 1897 when he served as a construction engineer in British Columbia. In 1906 he took charge of the completion of a freight rail line from Dixon, Alaska, near Nome on the Bering Sea, inland toward Council City. Mr. Knowlton completed its construction, although he vigorously denounced the project to the New York financiers and warned them that they would lose their investment.

"They wouldn't listen to me and insisted that the job be carried through," he said, "and they lost the rest of their money."

Thus Mr. Knowlton's prediction came true and before the war, the line had to abandon steam operation and what little traffic it carried was hauled by dog team. "Pupmobile," the sourdoughs called it.

Mr. Knowlton's last year in the far west was in 1910, when he lived for a short time on Seattle's first hill and hunted in the Olympic Peninsula, long before the thriving pulp industry developed in that area.

R. W. McCormick in Navy

Second in seniority in Knowlton Brothers is James C. McCormick, the treasurer, who has a record of 55 years' service. His son, R. W. McCormick, is a vice president of the company but was on leave to the Navy for the war. An Annapolis-trained man, the younger McCormick was called into the service as a lieutenant commander in the Navy.

E. W. Clarke is secretary, production manager and purchasing agent; M. T. Newcomb, superintendent, and H. A. Spencer, director of research.

The mill employs 150 persons, with a number of women added to the rolls during the war in jobs in the rag room and finishing room. This may be compared with the hand-paper mill of early days which employed only five persons.

Ranking third in point of service in this mill is John H. Brownlee, a finisher, who has been with the company 45 years. More than 20 others have had 25 years' service or longer.

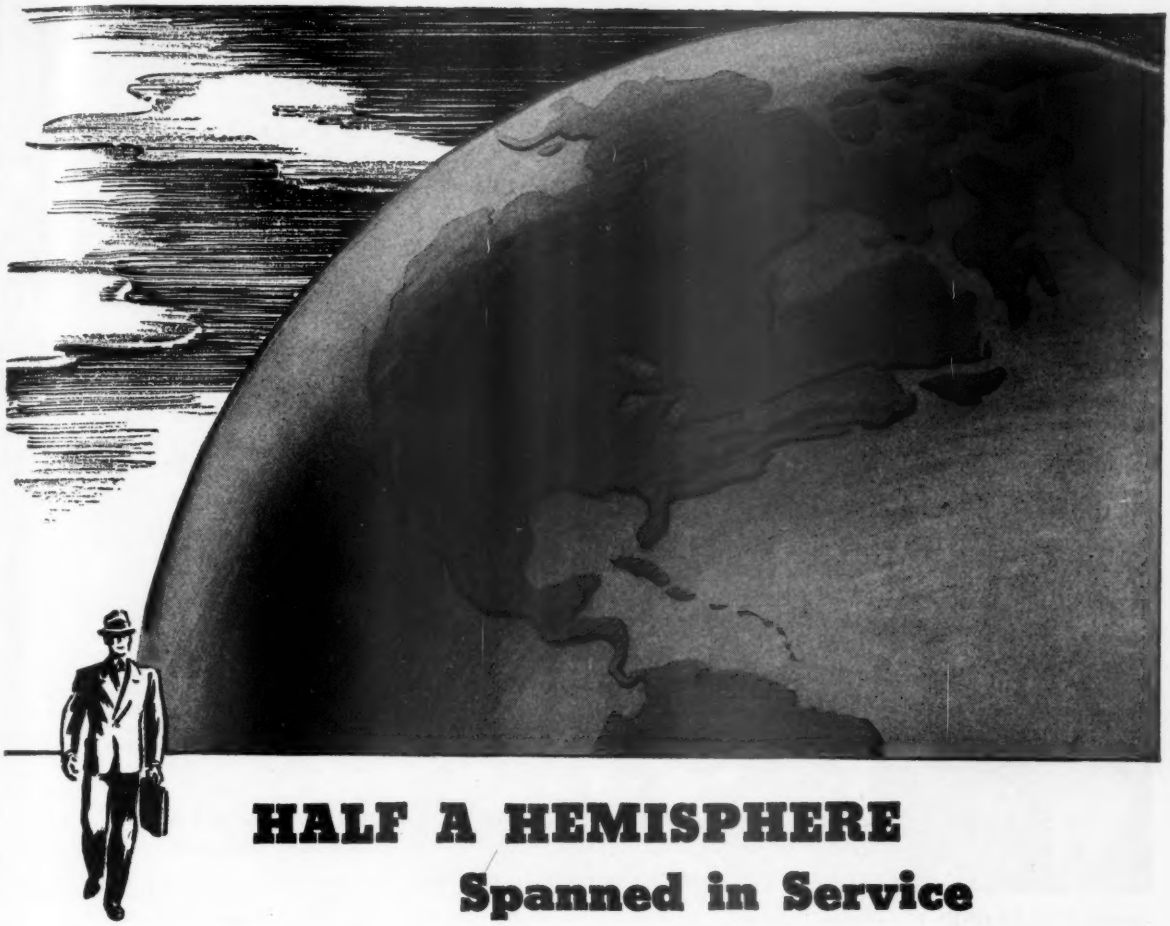
Organizers of the company, as it was formed in 1824, were George W. Knowlton, Sr., and Clark Rice. In those days the company combined paper-making with printing, including books, especially for schools.

Nearly forty years later—in 1861—members of the second generation of the Knowlton family, George W., Jr., and John C., bought out the business and ran it as a partnership until 1892, when it was incorporated.

Weston Buys Interest In Victoria Mill

Garfield Weston, multimillionaire baker and industrialist, has purchased an interest in Sidney Roofing & Paper Co., Victoria, B. C., and has become a partner in this enterprise with R. W. Mayhew, M. P., president, and Logan Mayhew, managing director.

Mr. Weston acquired ownership of J. R. Booth, Ltd., and E. B. Eddy Co., pulp and paper manufacturers, in Hull and Ottawa several months ago as well as a controlling interest in Somerville, Ltd., paper box and specialty manufacturers in London, Ont.



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The Dorr Company maintains a staff of thoroughly trained engineers at strategic points throughout *half a hemisphere* to render immediate service wherever and whenever needed... service in all fields to all Dorr installations whether they consist of a single piece of equipment or a complete process plant.

This extensive service is the direct result of a fundamental sales policy of The Dorr Company—Dorr takes the view that it sells not merely equipment but *the solution to the problem for which the equipment is intended.* Therefore, Dorr's interest in the purchaser does not end at the time of installation but continues far beyond. Dorr equipment provides an efficient, economical solution of the client's problem.

Avail yourself of Dorr's comprehensive knowledge of a wide variety of fields; gain the advantage of the service of Dorr engineers; take up your process equipment problem with The Dorr Company.

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RESEARCH ENGINEERING EQUIPMENT

ADDRESS ALL INQUIRIES TO OUR NEAREST OFFICE

PAST PRESIDENTS of The Paper Mill Men's Club of Southern California photographed at Hi-Jinks Sept. 14 (left to right): J. Dwight Tudor, Independent Paper Box Co. (1943); Paul R. Raab, Lily-Tulip Co. (1942); Lester E. Remmers, Crown Willamette Co. (1941); Charles Spies, Cupples Co. (1940); Albert C. Hentschel, Johnson, Carvell & Murphy (1939); George C. Wieman, Western Waxed Paper Co. (1938); Neil B. Sinclair, Sinclair-Lang Co. (1937); Edward N. Smith (1936); Frank Philbrook, Graham Paper Co. (1935).

Hi-Jinks of Southern California Proves Success With 350 in Attendance

AT SEPT. 14 HI-JINKS in Southern California, (left to right): Marvin Vanderheiden, Nekoosa-Edwards Paper Co., Vice Chairman; Tom Bruffy, The Dobeckmun Co., General Chairman; G. A. Thiem, Milwaukee Lace Paper Co., President, and R. R. Whiteman, Sales Manager of Blake, Moffitt & Towne, Los Angeles, thanking the Paper Mill Men's Club on behalf of the Jobbing Trade.

The annual Hi-Jinks of the Paper Mill Men's Club of Southern California was held at the Riviera country club, Santa Monica, Calif., Sept. 14, when the association was host to the wholesale paper and twine distributing trade, and took the occasion to honor all PMMC past presidents.

The all-day affair drew an attendance of 350 and was voted one of the most successful in the club's more than 10 years' of Hi-Jinks activities.

Gerry A. Thiem, Milwaukee Lace Paper Co., Los Angeles, president of PMMC, was official host. His official family was represented by J. W. Genuit, Fernstrom Paper Mills, vice president; Newbey A. Green, Crown Willamette Paper Co., secretary; and Gerry N. Madigan, Johnson, Carvell & Murphy, treasurer.

General chairman was Tom E. Bruffy, Dobeckmun Co., with assistant general chairman being Marvin A. Vanderheiden, Nekoosa-Edwards Paper Co. Chairmen in charge of the various committees included: Louis Wanka, S. G. Wilson Co., director of activities; Fred R. Schroeder, Searight Pacific, Ltd., finances; George Skleba, Dixie Vortex Co., entertainment; George A. Ward, Grunden-Martin Mfg. Co., golf; William Daly, Siklin Paper Corp., door prizes; Neil B. Sinclair, Nashua Gummed & Coated Paper Co., reservations; Charles E. Jones, Jones Brokerage Co., soft ball; Jack Leiser, Pioneer Wrapper & Printing Co., sweepstakes sales. Irvin E. Damon, district manager, Northern Paper Mills, did an outstanding job with the program and his dual office as publicity chairman for PMMC.

The afternoon saw around 100 PMMC members and guests participating in a golf tournament. In the champion flight Bert Donaldson shot a net 69 and won himself a pair of golf shoes. The runner-up was Otto Bruget, with net 70. Ted Corcoran won a $25 Victory bond by shooting the 14th as a hole-in-one. Many other prizes were awarded.

The annual softball game between PMMC and the Jobbers saw the host club defeating their guests by the close score of 10-9. Charles Jones, Western Package Products was PMMC captain; Robert Whiting, Blake, Moffitt & Towne, bossed the losers. The evening was devoted to a banquet and entertainment program.

As customary with the Hi-Jinks, its main object is to raise money for some charitable institution. This year was no exception; hundreds of dollars will be donated to charity later. Last year the winner of the $500 war bond was Gerry N. Madigan. The award stayed in the Johnson, Carvell & Murphy family again this year, going to Clyde E. Weimer.

Speaking in behalf of the jobbing trade, R. R. Whiteman, sales manager, Blake, Moffitt & Towne, thanked President Theim, and General Chairman Bruffy and members of PMMC for a most enjoyable Hi-Jinks.

Agreement to Log City's Watershed

Soundview Pulp Co., Weyerhaeuser Timber Co. and two other firms have entered a long-term agreement with the City of Seattle for a sustained-yield timber-cutting program in the city's Cedar River watershed.

Thus has ended another interesting negotiation in the matter of logging an important community watershed, and it has been settled in a manner highly satisfactory to both loggers and city.

As has happened in other regions, a political controversy threatened to hold up the logging program but the testimony of forestry engineers and technicians brought forth convincing proof that a systematic logging program would improve the sanitary condition of the watershed, rather than harm it, and that it would perpetuate the forest stands.

The Soundview Pulp Co. has pushed in a logging road to begin cutting its timber. Weyerhaeuser Timber Co. has not announced any immediate cutting plans.

Under the agreement, the annual cuts and methods of logging are controlled. It provides cutting of the timber in a minimum of 25 years or a maximum of 40 years. At the minimum rate, Soundview may cut 35,000 feet per year. Other companies involved in the agreement are Northern Pacific RR, whose timber is owned by Soundview, and the Cascade Timber Co.

As far as 40 acre tracts are logged, or in any event after 40 years, the city becomes the owner of the lands, on which it plans to carry on reforestation programs.

Tomorrow's Better Chain is Here...

PACIFIC CHAIN IS BACK AGAIN. During the war Pacific Chain products were mostly channeled to the Government. Output was increased. Quality set new high standards in fulfilling the extremely rigid specifications and requirements of the Maritime Commission, Navy Department and the Army Transport Service.

Now Pacific Chain is back to its original job—chain for sawmills, pulp and paper mills. Better chain than ever before. Stronger and longer-lasting. Construction involves a new method of link forming—an exclusive Pacific Chain patented feature of electric weld on high tensile steel links.

If you're planning a new mill—or remodeling your present mill check into this better chain. *Your inquiries are welcomed.*

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PACIFIC CHAIN
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1901 N. W. Wilson St. Portland 9, Oregon

Hydronamic Inlet Improves Stock Flow At Fiberboard's Antioch, Calif., Mill

Papermakers are generally agreed that nearly all their headaches over sheet formation are due, first, to improper stock preparation, and second, to improper hydraulic conditions.

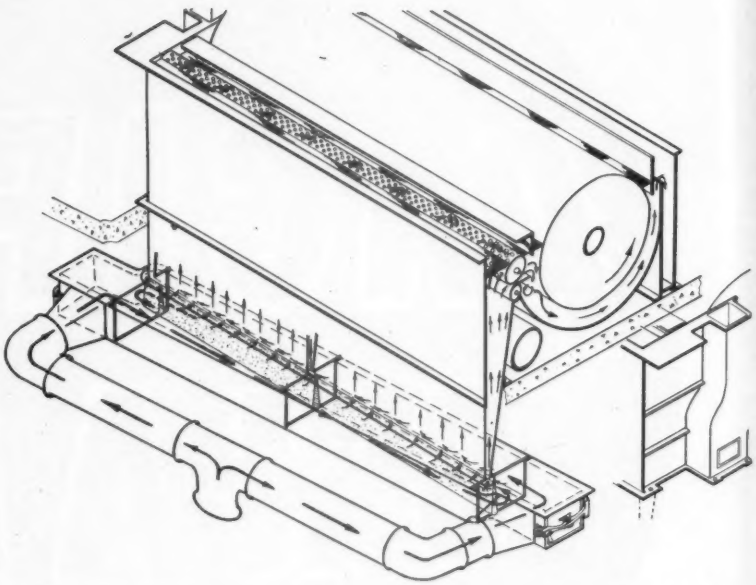
Articles have been published in this magazine in recent months dealing with the most recent development in stock preparation. As to the second most important cause for variations in weight and sheet formation, considerable study has been made of ways to improve on stock inlets.

In this connection, it may be noted that a recent installation of a Black-Clawson Co. hydronamic stock inlet on the B-C vat of No. 2 cylinder machine at Antioch, Calif., division of Fibreboard Products Inc., has been giving a good account of itself. This new inlet is designed to provide uniform flow and distribution of stock across the entire width of the machine.

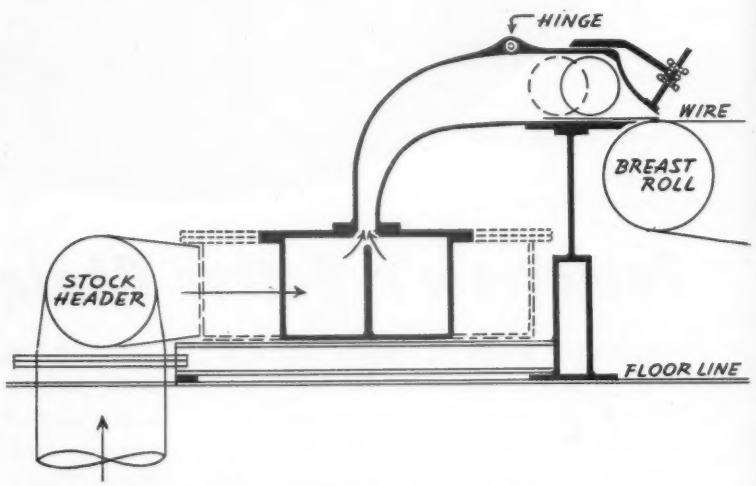
Since the inlet has been installed at Antioch, the firm's management has found that the stock flows onto the cylinder at a much slower speed with a much more uniform flow. The mottle effect has been practically eliminated, and longer fibers can now be handled without any trouble. And finally, heavier webs can now be formed without any difficulties.

The thickness of the webs has varied from .002 to .007. The .007 web was on a plain chip sheet. Due to the type of orders since the hydronamic inlet was installed, the company has run only the three following grades of stock: solid news, plain chip, and jute liners.

Says C. Meyers, board mill superintendent of the Antioch mill: "There is no comparison between the performance of the vat now as compared to the old set-up. It is operating very satisfactorily."



SCHEMATIC ARRANGEMENT OF BLACK-CLAWSON hydronamic inlet for vat.



BLACK-CLAWSON CO.'s Hydronamic Pressure Inlet and Slice.

Mr. Staege Explains It

Stephen A. Staege, consulting engineer for Black-Clawson Co., Hamilton, O., has made an extensive study of approach flow of stock to machines and he discussed the subject at a superintendents' meeting in Greenville, S. C. In an interview with PULP & PAPER INDUSTRY, Mr. Staege explained the principles and operation of the hydronamic stock inlet, as follows:

"The hydronamic inlet is equally adapted to both cylinder and fourdrinier machines and makes possible not only uniform flow but uniform consistency, distribution of long and short fibers, and uniform dispersion of light and heavy fibers; because all of the stock is subjected to the same hydraulic condition. Also, cross currents and distributing eddies are avoided.

"The rectangular inlet box is divided by a diagonal partition into two tapered ducts, with the stock inlet at the large end of each. A slot orifice directly above the diagonal partition provides a discharge opening from each duct for its entire length, as the diagonal partition does not extend all the way to the top of the box.

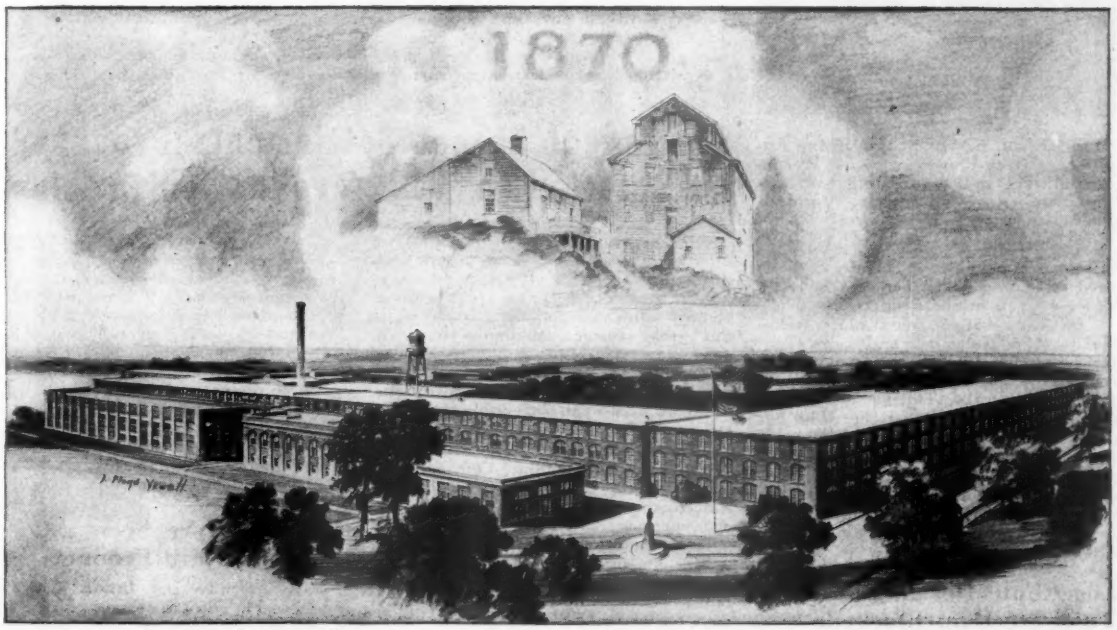
"The tapered stock ducts, with a common discharge slot orifice is the secret of uniform flow and distribution; and is what makes possible more uniform weight and good formation.

For Fourdriniers

"The preferred arrangement for the Fourdrinier machine is the pressure inlet slice arrangement with no open head box," he said. "The head, or pressure at the slice, is automatically controlled by varying the speed of the pump or by throttling the discharge, to maintain the head constant for any given paper speed or operating condition. The head works need be no higher for 2000′ per minute paper speed than for 200′. Dead stock is eliminated and the massive high head box is made unnecessary.

"For the cylinder machine, the hydronamic inlet discharges directly into the vat from the bottom, in the preferred arrangement, through a tapered connection, and as in the case of the Fourdrinier machine no baffles are required. Very large flows of stock can be handled without disturbing eddies, as in the case of uniflow overflow type vats, with

75 Years of Paper Progress



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KENWOOD WOOL PRODUCTS

Also, just 75 years ago, F. C. Huyck & Sons began the manufacture of fine quality papermakers' felts. Recognizing that in wartime and peacetime every paper problem is a felt problem, this organization has pioneered in research and in service, working always in the closest cooperation with the paper industry.

As the world's largest manufacturer of papermakers' felts, F. C. Huyck & Sons, in observing its 75th Anniversary, salutes the paper industry for its magnificent contribution to the winning of the war, and looks forward to a continuation of the policy it has so long pursued, seeking new and better ways to help produce more and better paper—the product most used by man.

F.C.HUYCK & SONS · *Kenwood Mills* · ALBANY, N.Y.

STEPHEN A. STAEGE, Consulting Engineer, Black-Clawson Co.: "Hydronamic inlet makes possible uniform flow, uniform consistency, uniform fiber dispersion."

sufficient circulation to obtain the desired relative velocities between the mold and the stock in the mold circle.

"Inadequate stock inlets cause eddies and varying velocities and centrifugal forces, producing variations in fiber concentrations of long and short fibers, resulting in streaky, blotchy or mottled formation and uneven weights. The hydronamic inlet through its ability to distribute the stock uniformly is most effective in preventing such troublesome conditions. The hydronamic inlet stock flow is so uniform that baffles or distributing rolls are not required to obtain an even flow."

Log Chute Designed To Solve Dam Blockade

The hydraulic engineering laboratory at Oregon State College, Corvallis, has a model log chute under construction which, if successful, will solve the problem of passing logs over the Oregon City dam during the period of reconstruction of the navigation locks there. The United States Engineers will enlarge and rebuild the present locks, but will not undertake the job until the log passage problem can be accomplished so no interference with lumber and pulp production will result.

F. W. Horskotte, consulting engineer, Portland, assisted by Dr. A. C. Mockmore and his staff in the engineering department, is engaged in designing a chute which will allow logs to pass the falls without affecting operation of power facilities installed at the falls.

Sam Salmonson Becomes Grand-daddy 9th Time

Sam A. Salmonson, assistant general superintendent, Soundview Pulp Co., Everett, Wash., and Pacific Coast chairman for the Superintendents' Association, has become a grandfather for the ninth time.

His daughter, Mrs. Joseph A. Hall, and her husband, a Portland, Ore., contractor, became the parents on Sept. 15 of a daughter, Sandra Gail.

Want Any Lawns Planted? House Painted?

Lawn making may seem a far cry from papermaking or selling but 12 Zellerbach Paper Co. salesmen in the Portland (Ore.) division have tied it in very neatly.

Miss Steur, who has been with the company for many years, and her sister recently bought a home. So, since there are no men in Miss Steur's family, the salesmen decided that they would put in a lawn and gravel walk at her home, rather than give her a lamp or picture. The wives of the salesmen contributed a picnic lunch, the men came and worked hard all day, and the job was done with the maximum of efficiency and good fellowship.

A similar project was undertaken for one of the company's returned servicemen, who came back to the Portland division seriously incapacitated. Married, and the purchaser of a new home, it was impossible for him to do any of the hard work about the place. Seventeen men from the Portland division painted the house inside and out, did small carpentry work necessary, put in an asphalt drive and sanded the floor. It took several week ends but the job got done in a fine spirit of camaraderie.

Among the lawnmakers were Messrs. Gillespie, Word, Mitchell, Wade Bickel, Jones, Barrett, Edwards, Lampert, Hanford, McElvain, Reed and Herft. Vice President Victor E. Hecht, who was in Portland at the time, also helped out.

Permanent Forest Settlements Proposed As Solution to Wood Production Problem

One of the problems of the forest industries in eastern Canada has been the encouragement of labor to maintain a year-round rather than seasonal contact with operations. In meeting this problem some companies have endeavored, wherever possible, to develop community settlements near the pulp or paper mills or the woods operations, so as to create an incentive for workers to stay close to the job.

J. A. Auden, manager of the woods department, Port Arthur, Ont., division of Abitibi Power & Paper Co., has advanced this idea to comprise creation of a permanent forest settlement where natural conditions are favorable.

Mr. Auden, who has given considerable thought to this type of project, recently outlined his views to the Canadian Society of Forest Engineers.

"If we set as our ultimate goal the establishment of a resident population in the forest," said Mr. Auden, "we will do far more for the cause of forestry, and do it more quickly, than if we set forest management as our goal, and bring in people just to practice forest management."

If he had his way, Mr. Auden would create conditions that would reverse the present trend of population from the country to the city. Such an objective, he contends, is the forester's duty. He would like to see the country scattered with small forest holdings, individually and intensively managed, passing from father to son, from son to grandson, and so on.

Such permanent forest residents would have to be carefully chosen and they would have to be supplied with reasonably adequate facilities for maintaining a community—roads, electricity, water supply, schools, etc. They would need the assurance of year-round employment and be accessible to instruction and marketing advice.

Mr. Auden would avoid the "company town" feature as much as possible, and he would allocate settlement areas in such a way that the greatest possible number of diverse activities and sources of income from natural resources would be obtainable.

"No community," says Mr. Auden, "should depend exclusively upon one 'egg-basket,' although income from forest production will in most cases be of predominant importance." And he adds: "Annual harvesting of resources should be subordinate to the needs of perpetuation of all renewable resources, and of community interest."

Mr. Auden's ideas may be more applicable to the eastern woods than to those of the west, but they have aroused wide interest among foresters, woods managers and mill operators.

Bright Future Seen For Tube Mill Products

Sales executives of Brown Co., Berlin, N. H., foresee bright future for diversified products of that company's pulp tube mill, particularly for underground electric conduits.

The market for these conduits has hardly been scratched, and they expect demand to grow in smaller towns and cities as well as larger cities.

The absence of overhead wires in Washington, D. C., is an example of the improved appearance as a result of using underground conduits. Also hurricanes and other disasters have brought home the more practical value of keeping all wires underground and in continuous operation.

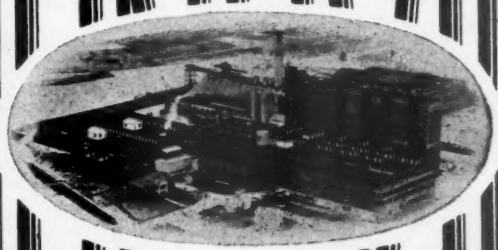
Bermico electrical conduit, principal product of the Brown tube mill, is sold to the public utility company or contractor who installs it by Westinghouse Electric Supply and associated jobbers.

Bermico fiber conduit has been adapted to many strange uses. It is now being used successfully as mortars to shoot insecticide high into trees to control the canker worm.

A new Bermico drain and sewer pipe shows great promise of a large volume of sales. It will replace tile and cast iron pipe in sewer lines, for irrigation, and for the drainage of farmlands.

Other products made at the tube mill are the Bermico fiber core and Bermico shell roll for use by paper mills, rubber mills, textile mills and paper converters.

SOUNDVIEW



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Here's WPB's Own Story of What Happened And Why--in the Pulp and Paper Industry

THE War Production Board's own story of its operations and policies and problems in 1944 has been published in a 142-page "Report of the Chairman"—J. A. Krug—addressed to President Truman.

Only parts of a half dozen pages are specifically devoted to a discussion of pulp and paper. But in these few pages, some of the interpretations and conclusions stated under Mr. Krug's name—probably written by someone else—are very likely to arouse some different shading of opinion among leaders in the pulp and paper industry.

For instance, this official document, sets forth slowness to adopt "modern methods of pulpwood logging" ahead, or at least on a par, with the labor shortage, as the primary cause for tight supply of pulp during the critical year of the war.

There is no doubt that difficulty in obtaining priorities for modern equipment for wood barking and preparation in the mills designed to extend the utilization of wood and lessen waste, thus easing the production problem, was an important factor not mentioned in this WPB analysis. Nor was the serious difficulty in obtaining trucks and tires —and both of these factors were a responsibility of the WPB. Too often, one division of WPB would block the attempts of another division to aid industry.

Here are excerpts from Mr. Krug's report which seem of particular interest in the pulp and paper industry:

The Materials Situation

"During 1944, the over-all supply-demand scale for materials swung all the way from surplus at the beginning of the year to shortage at the end. Within the over-all surplus, of course, the supply situation for individual materials varied by kind and by degree. Generally, however, those raw materials that had once been most critical—aluminum, copper, and steel—were in plentiful supply during the first half of the year, although supplies again grew tight under the year-end increased military requirements. The greatest supply problems during 1944 were encountered in the materials that had been considered, early in the war, as not particularly troublesome: Textiles, lumber and lumber products (pulp and paper), leather, certain ferro-alloys, and various rarer minerals.

"The causes of this 1944 reversal of the 1942 material supply situation were twofold. First, the materials most critical early in the war had been placed under the most stringent production and distribution controls, while the less critical materials had been only slightly controlled. For the critical metals, production facilities had been greatly expanded, imports increased, requirements minutely screened, conservation practices adopted, and strict allocation imposed. Second, conservation of the critical materials had necessitated widespread substitution of the less critical materials, and when to these new wartime industrial uses were added the factors of both increased military demands and a serious manpower shortage in the industries producing these less critical materials, demand far outweighed supply.

HAROLD BOESCHENSTEIN, who put pulp and paper industry under stringent controls—as he previously had done in steel. Now he is Operations Vice Chairman, one of top WPB figures.

"The serious manpower shortage was in turn at least partially caused by the lower wage scale of the textile, lumbering and mining industries, as compared with wartime manufacturing industries, a wage differential that resulted in loss of labor to the more lucrative fields. Another factor in the manpower problems of the textile, lumber, and mining industries, as of others, was the loss of workers through Selective Service. Though the labor force of these industries had to be drawn upon to fill draft quotas, later urgent needs for the products of the industries compelled the Army to furlough workers back to them. Other workers had left voluntarily for industries regarded as more directly contributory to the war program."

Wood Pulp

In a chapter on "Key Resources," the report ranked, and discussed, wood pulp with these other materials, in this order—aluminum and magnesium, copper and brass, steel, lead and zinc, miscellaneous metals, rubber, chemicals, textiles and leather, aviation gasoline, lumber and wood pulp. Under "wood pulp," it said:

"Out of every seven trees felled, five are headed for lumber and two for pulpwood. The pulpwood logs, macerated and reduced with chemicals, becomes woodpulp, the intermediate material from which paper is made. Like lumber, paper and paper products have been put to hundreds of new uses during the war as substitutes for other critical products, leaving less for requirements of paper and paper products for the more familiar uses, which have all risen sharply.

"The cause of the tight supply begins in the woods, where the modern methods of pulpwood logging are slow to be adopted and where there is a shortage of loggers to fell the pulpwood. Transportation difficulties, both for pulpwood logs and woodpulp, have played a part, as have decreased imports. The reason for the increased demand, on the other hand, is directly traceable to increased military needs: Increases of ordnance pulp, used as a substitute for cotton linters in explosives, of waterproof papers for the Army, of photographic papers, of containers, of V-boxes for overseas shipment. Practically every piece of equipment produced in the United States today is packaged in some manner in a paper or paper product. It is necessary only to consider the tremendous increase in output

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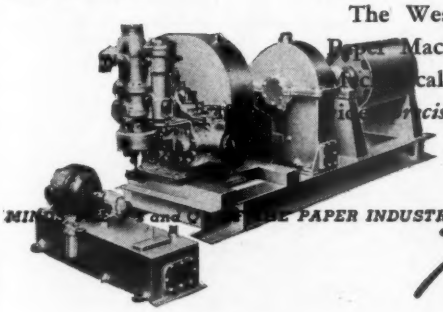

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of all types of equipment during the war years to understand the burden that has been placed upon the wood pulp and paper and paperboard industries, as well as upon the WPB, in its task of seeing that production meets requirements, and that supply is distributed to fill all essential needs.

"Strenuous efforts were made by the WPB during 1944 to augment the woodpulp supply, increasing the efficiency of pulpwood logging, enlisting War Labor Board cooperation to permit needed wage adjustments, stimulating increased cutting of pulpwood by farm labor, arranging to increase imports from Canada, and limiting end use to those items directly connected with the war effort. A wastepaper salvage campaign was vigorously promoted during 1944, since wastepaper can be substituted for wood pulp to a certain extent in paper and paperboard production, and conservation measures have been urged, and instituted throughout the Nation.

While, therefore, the year's domestic output of slightly more than 10 million tons of woodpulp was below the early years of the war it did represent a gain of some 400,000 tons over 1943, and the conservation and control measures instituted during 1944 were expected to bring about a more equitable supply-demand balance in 1945."

Pulp Allocation

"Closely associated with the lumber shortage was the need for controlling the production and distribution of pulp and paper, the report continued. "In 1943 the WPB devised and put into operation a Pulp Allocation Plan, which continued in effect in 1944. The plan provided for allocation of the available woodpulp supply to the individual paper mills for the production of minimum quantities of each grade of paper and paperboard. The task of allocation is complicated in this industry by the necessity for prescribing the pulp use of both the integrated paper mills, which produce their own wood pulp, the nonintegrated or semi-integrated mills, which obtain pulp from other sources in order to remain in operation.

"The allocation of wood pulp and provision of necessary quantities of paper and paper board presented special difficulties in 1944. In the fall of the year, as a result of the steadily tightening woods labor situation, there was a growing shortage of pulpwood—the raw material for wood pulp—although some relief was received in the third and fourth quarters from Canadian shipments in excess of anticipated levels. The proportion of the pulp supply available for the manufacture of paper and paperboard declined in 1944, chiefly because of the tremendous increase in War Department use of pulp for the manufacture of explosives, and an increase in export requirements. But while the supply of paper grades of pulp was falling, demand continued high for paper and paperboard for urgent military and war-supporting purposes, including V-boxes for overseas shipments, waterproofed papers for the Army, photographic papers, and wet strength map paper. Pulp remained a serious problem for the WPB at the year's end."

Civilian Supply

Under "Satisfaction of Civilian Requirements," in another chapter, the report said:

"Although the pulpwood and waste paper salvage drives augmented the supply of raw materials for paper and paperboard production to some extent, growing military demands both for wood pulp and for paper and paperboard—already noted in this report—limited the manufacture for civilian use of such essential items as containers, bags and wrapping paper, sanitary papers and cultural papers. In certain localities shortages of bags and wrapping paper were serious during the second and third quarters.

"While paper, the basic material used in printing and publishing, has gradually become one of the most critical raw materials, total dollar value of newspaper, books, and magazines, as well as the over-all value of advertising, have reached the highest level recorded in the history of the industry. This volume has been retained despite a reduction of about 25% in the total tonnage of printed matter produced now being increased about 5% in all printing uses."

Organization Adjustments

"One of the most important changes in WPB organization during 1944 was the creation of a stronger field organization and the wider use of Production Urgency Committees to handle production problems on a local basis," the report said. "Preliminary steps in this direction had begun in late 1943 with a substantial increase in the field offices' authority to issue priority certificates; the creation of an Operations Council of regional directors and top Washington officials; and the formation of ten Production Urgency Committees in Pacific Coast and other critical labor areas."

According to the report, "the personnel of the WPB was reduced during 1944 from 17,904 to 12,963, a fall of about 28%. Total employment at the end of 1944 was not much more than half the high watermark in WPB employment of 22,847, reached in Feb. 1943. . . The number of buildings occupied by the WPB in Washington was reduced from 14 to 9 during the course of the year. Substantial savings were effected in travel, communications, printing and binding, and other expenditures through a stricter enforcement of budget controls."

In discussing the various changes in top personnel of WPB, most of them reported fully in the press during the year, it noted two of special interest to the pulp and paper industry.

It mentioned that Harold Boeschenstein, on leave as president of Owen-Corning Fiberglas Corp., succeeded Hiland G. Batcheller in December 1944 in the key post of Operations Vice Chairman. It was Mr. Boeschenstein who organized the new Forest Products Bureau in Oct. 1943, with Paper, Paperboard, Lumber, Containers and Printing-Publishing Divisions under his direction, and when Mr. Boeschenstein took Mr. Batcheller's place, he was succeeded by the present FPB director, Benton Cancell. The report also mentioned the resignation of A. D. Whiteside as Civilian Requirements Vice Chairman in Feb. 1944. He was succeeded in May by W. Y. Elliot. Of the ten vice chairmanships in WPB, these are among the most important.

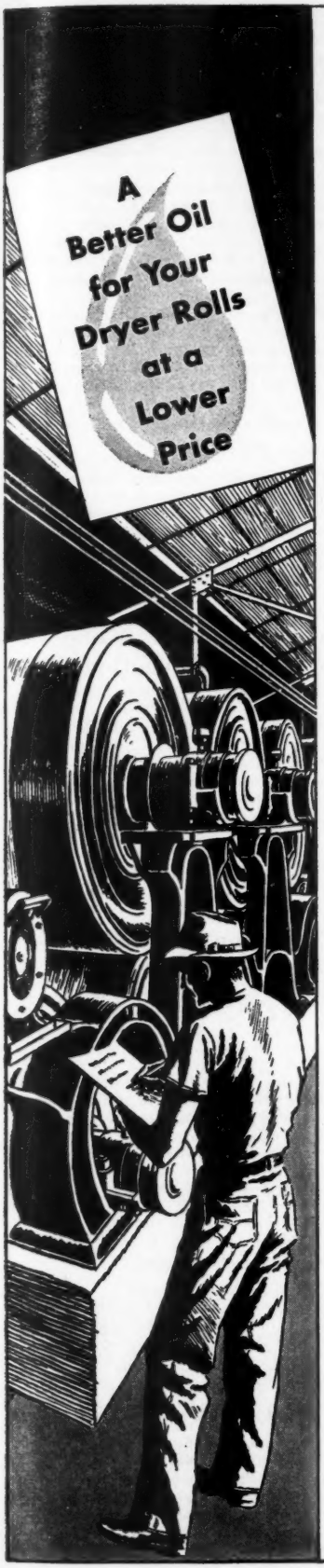
Hercules Movie Goes South of the Border

The Hercules Powder Co.'s industrial film, "Careers for Cellulose," which pictures the manufacture of cellulose plastics and has been shown at many paper industry meetings in the U. S., will be shown in 20 Latin American countries by the Office of Coordinator of Inter-American Affairs.

The all-color, all-sound film is now being translated into Spanish and Portuguese for the Latin American showings.

Fast-Growing Trees Produced

Rapid-growing hybrid "guinea pig" trees have been produced by the New York State College of Forestry at Syracuse, N. Y., which will grow six feet in one year. These trees are claimed to be as good as native poplar for paper pulp.



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Some New Rayon Products and Processes

Producers of higher grade pulps apparently are justified in expecting a bio future in the acetate field.

Three important postwar trends in acetate rayon are foreseen by A. M. Tenney, head of A. M. Tenney Associates, sales representatives for Tennessee Eastman acetate yarns and fiber. These are: development of finer staple, more selective use of dyestuffs and the return of the heavier acetate counts.

Considerable experimentation has been going on in the development of one and one-half denier acetate staple which would make possible the spinning of much finer yarns, according to Mr. Tenney. Such fine denier staple, which may be expected to make its appearance during the early postwar years, could be used either in combination with the one denier viscose staple, now being produced on a limited scale, or alone.

New Dye Process

One of the postwar developments of importance to acetate rayons, according to Mr. Tenney, is the vat dye process originated by Tennessee Eastman Corp., which is being developed in cooperation with the Joseph Bancroft & Sons Co.

By this process all-acetate fabrics or fabrics containing cellulose acetate in conjunction with natural or regenerated cellulose fibers may be dyed with all sorts of vat dyes in such a way that solid shades are produced on combination fabrics as well as on the all-acetate fabrics.

This process will not be confined to fabrics containing Eastman acetate rayon, but will be available for any acetate fabrics because Eastman feels that through its wide application the superior fastness qualities of vat dyes will broaden the field of acetate rayon. Licenses to use this process will be granted.

Rayon Rugs

Another important development, according to Mr. Tenney, will be the return of heavy denier acetate yarns when it is possible to obtain a prewar flow of raw materials. This, he said, will make itself felt in the reappearance of the traditional sharkskins. He also predicts the introduction of a new type of sharkskin weaves having heavy denier filament yarn acetate wraps and spun acetate filling.

Another possible new development is the use of acetate staple in the production of better rayon rugs and carpets.

Kimberly-Clark Starts Building Big Laboratory

Kimberly-Clark Corp. announces beginning of construction of the "most extensive" commercial technical laboratory in the paper industry at Neenah, Wis. Work has begun on repairs of an existing building used since 1930, to provide 60,000 sq. ft. of added space.

The new facilities will include research laboratories, development pilot plants, offices, conference rooms, library and lobby exhibits. H. A. Rothchild, longtime technical director for Kimberly-Clark, will direct the new facilities.

It eventually will provide employment for 160 scientists and technicians.

President Cola G. Parker stressed "consistent pioneering in new products and processes" as making possible total employment of 6,000 persons by K-C mills.

Rayon Situation— More for Civilians

Rayon manufacture in which wood pulp is the major raw material is reported as follows in "Rayon Organon":

"Total rayon deliveries over recent months have tended higher, due entirely to the increase in viscose tire yarn output. Tire yarn shipments in May were at the 18,000,000-pound level and progressive increases in this item are expected each month over the balance of this year.

"Deliveries of non-tire rayon yarn have now apparently stabilized at a monthly rate of about 21,000,000 pounds for viscose-cupra yarn, 14,000,000 pounds for acetate yarn and 14,000,000 pounds for staple fiber. These rates are about the same as those for the last half of 1944.

"For the balance of 1945, it is expected that, while the viscose tire yarn will continue to increase each month, the non-tire viscose-cupra and the acetate yarns should show little change in volume. On the other hand, staple fiber production may decrease as much as 15 or 20% by the end of 1945 due to the conversion of some staple fiber facilities to tire yarn production for war and essential purposes.

"The defense uses of non-tire type rayon are expected to decline in the third quarter because of the partial completion of several military programs after V-E Day. Early in July, a new rayon fragmentation bomb cloth program was announced for the last half of 1945, but it is believed that the amount of rayon required will be only about two-thirds of the yarn going to this cloth in the first half year. These cut-backs should mean more rayon for civilians."

Alaska Army Facilities Suggested As Mill Site

The Ketchikan Chronicle recently published an article suggesting the buildings and facilities of a $37,000,000 army base on Excursion Inlet in Alaska might be used by a pulp and paper industry.

It is well-equipped with water, power and sewage facilities and includes a number of buildings. It was never used for military purposes. About 700 German prisoners were sent there to wreck the army's barge terminal. Refugees from a burned-out nearby Indian village are using the houses as homes.

Reichhold Expansion In South

Reichhold Chemicals, Inc., plans to expand its facilities in Tuscaloosa, Ala., by adding a unit to produce chemical color pigments, a company announcement declared.

"In line with the company's general policy to control certain raw materials strategic to its processes . . . the (Reichhold) expansion program calls for the manufacture of chromium chemicals and certain organic chemical intermediates and dyestuffs (at Tuscaloosa). . . ."

Wants Data for Kraft Mills in China

The Technical Advisory Service of the U. S. Smaller War Plants Corp. has received requests for material pertaining to operation and administration of a wood pulp mill and a kraft paper mill which might be established in China.

Cancell To Join Powell River

Benton R. Cancell, director of the Forest Products Bureau, War Production Board, has been appointed a vice-president of Powell River Co. and will take office January 1, 1946, according to announcement made by President Harold S. Foley.

Mr. Cancell has been engaged in supervising the production and usage of pulp wood, pulp, paper and paper board. He became deputy director of the Forest Products Bureau in November, 1944, and was made director in March of this year.

Prior to his Governmental activities, Mr. Cancell was engaged in the paper manufacturing business, his last activity having been with the St. Regis Paper Company, of New York.

Hercules Makes Laminate Sheets

First complete unit for production of cellulose-derivative laminate sheets is now in operation at Hercules Powder Co.'s Parlin, N. J., plant, it has been announced.

The thermoplastic laminating facilities include a multi-opening press to manufacture 50 by 50-inch flat sheets.

Reliance Electric & Eng. Co. Announces Promotions

Two promotions in top personnel of Reliance Electric & Engineering Co., 1088 Ivanhoe Road, Cleveland, are announced by James W. Corey, president. Fred E. Harrell, chief engineer for the past two years, has been appointed gene.al works manager, succeeding S. B. Taylor, who has resigned as manufacturing vice president but will remain on the board of directors. William R. Hough, product development engineer, has been named chief engineer succeeding Mr. Harrell.

What Drop in War Orders Means to Industry

Orders received by General Electric Co. during the first six months of this year amounted to $695,496,000 compared with $811,023,000 in the same period of 1944, a decrease of 14%.

Charles E. Wilson, president, said: "The downward trend in orders may be expected to continue temporarily, possibly at an accelerated rate. A temporary decline in orders need not cause any great dislocation if, simultaneously, industry is given the freedom to design and plan for new products to take up the slack."

Texas Gulf Award

Texas Gulf Sulphur Co. has been notified of the award of the fifth Army-Navy E to the production plant at Newgulf and the loading plant at Galveston, adding a fourth star to the flag at each plant.

Calco Chemical Promotion

Appointment of James L. Naylor, manager of Providence, R. I., sales office, as assistant manager of the Dyestuff Dept., Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., is announced by J. Pfister, manager.

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Details of Powell River's Hydraulic Barker, Big Chipper and Other New Equipment

Powell River Co.'s plans for installation of a hydraulic log barker, new screening and chipping equipment, loading and handling devices and for provision of additional power are now well advanced.

Meanwhile, Powell River's waterfront is undergoing extensive changes as a result of the reorganization and extension of the company's wood handling and utilization facilities.

An area of approximately five acres is being prepared by cut and fill immediately to the south of the Kelley Spruce drying sheds. This fill is contiguous to the new wharf now under construction.

The wharf is 700 feet long from the shore line, with a head of about 100 feet at the end. It is being built on creosoted piles and has a concrete deck slab reinforced cast directly onto the top of the piles, which will provide for durability and fire-proofing. It is intended to use this wharf in the immediate future for the handling of the company's lumber products at Powell River directly onto scows, and it will be utilized later for handling materials to and from any new development in this particular area.

Provisions are also being made for the installation of a large hammerhead or level luffing-type crane on this wharf to transport heavy material.

The wharf is in the immediate vicinity of the old government wharf which was taken over by Powell River Co. some time ago. Considerable dredging has been undertaken south of the wharf and between the wharf and the sawmill, to permit further accommodation for log pond use and easier handling of the whole logs.

Close to the present sawmill a hydraulic barker similar in type to that being operated at Longview by Weyerhaeuser Timber Co. will be installed. The barker will be capable of handling logs up to 72 inches in diameter and 26 feet long. The equipment will be supplied with water at a pressure of 850 pounds per square inch, which will be generated through two 500-h.p. pumps.

During the season when the bark is particularly hard to remove a third pump can be put into service, boosting the discharge pressure 1,250 pounds per square inch. The barker will be installed in an all-steel frame building erected on new fill and supported by wooden piles driven into this fill after consolidation. The fill will be surrounded by a dry rock wall.

Big Chipper

Provision is also being made for the installation of a second hydraulic barker to handle small wood, but this will come later. In connection with the barker installation a large Waterous chipper is also being installed in the vicinity of the existing mill. This chipper will be capable of taking logs up to 26 inches in diameter and 26 feet long. There will be two 500-h.p. Westinghouse chipper motors of wound rotor type, 250 r.p.m., arranged for 15 per cent slip.

Completely new equipment for screening and conveying chips will be erected near the chipping machine. The chip screen is of Rotex design manufactured by Orville Simpson of Cincinnati.

EDWIN LETTS OLIVER, President of Oliver United Filters, Inc., who went back to his Alma Mater, the University of California, on June 23 and was given the additional degree of Doctor of Laws, as an honor for having invented the filter bearing his name and contributing in other ways to industrial progress.

Present equipment in the company's barker and chipper building will be removed and block loading facilities will be installed in the neighborhood of the sawmill. The blocks will be carried directly to the grinder rooms from the sawmill by means of straddle trucks. Handling of paper and pulp is being modified in such a manner as to eliminate all hand trucking.

All pulp and paper products will be handled by palette boards which will be transported by means of fork trucks. The present rail facilities will still be used for handling paper. However, all handling to and from railroad cars and storage in warehouses will be carried out by means of power-driven Towmotor Co. fork trucks supplied by Canadian Lift Truck Co. In order to further facilitate the handling of the larger rolls tilting tables are being installed which will enable the large rolls to be placed on the palette board without undue manual effort and will also speed up the loading of these palettes.

More Power

These and other innovations will require additional power. The power development at Lois River, which at present consists of an 18,000 KVA generator, will be boosted by the addition of another unit which has been ordered from Canadian General Electric. It is a vertical water-wheel driven generator, 18,000 KVA, 14,400 KW, 333 r.p.m., 6,600 volts. It is expected that this generator will require about eighteen months for delivery. It will be driven by 25,000 h.p. vertical plate steel casing turbine with covering equipment and all accessories and draft tubes, foundations for which are already installed as is the Johnson valve.

The order for the water wheel will be placed in the near future. It is not intended at the present time to make any alterations on the Scanlon Dam to provide extra storage accommodation.

It is intended to develop the use of salvage logs from the Pioneer Timber Co.'s timber at Port McNeil, near the northern tip of Vancouver Island. In this area there is an estimated recovery value of from 7,000 to 10,000 feet of logs per acre. The present intention is to leave some of the lighter logging equipment in the woods and cold deck the smaller logs of 6 inches and 12 inches in diameter. These will be wired into bundles about 5,000 feet each, loaded on trucks, transported to the booming grounds and boomed up in net booms and towed to Powell River.

Fitzgerald Heads Expanded Hercules Office

L. E. Fitzgerald, who has supervised Hercules Powder Co. paper mills sales and technical service in the Milwaukee territory for the past 11 years, has been named Hercules resident manager at 5228 North Hopkins St., Milwaukee. His staff will be augmented to handle business in Wisconsin, Minnesota, and the northern peninsula of Michigan.

Sorg Officials, Dr. Kress Visited Mill

J. A. Aull, president of Sorg Pulp Co., and D. G. Driscoll, president of Sorg Paper Co., Middletown, O., accompanied by H. C. Lange and L. C. Courier, directors, and Dr. Otto Kress, consultant of Appleton, Wis., visited the Sorg kraft mill at Port Mellon, B. C., during the past month; with Vice President and General Manager Hugh M. Lewis of the Vancouver office.

Oregon P. & P. Shows Lower 1944 Income

Oregon Pulp & Paper Co., Salem, Ore., through F. W. Leadbetter, president, released a balance sheet to stockholders in mid-August showing a net income after deductions of bond interest, depreciation, and federal tax provisions of $308,375.59 for 1944. The 1943 figure was $341,842.86. Entries included: net income before deductions, $1,314,489.02; provision for federal income and excess profits taxes, $744,124.31; depreciation, $185,439.12; income bond interest, $46,550. Assets as of the end of 1944 were set at $5,888,848.10; with current assets at $2,271,015.66.

The statement says, "in view of the heavy taxes due the United States government, no definite dividends policy is possible, as large cash and security reserves should be maintained."

Ontario Paper Co. Mills Have $4,500,000 Program

Ontario Paper Co. and Quebec North Shore Paper Co., its chief subsidiary, are expected to spend about $4,500,000 on expansion and modernization, according to President Arthur A Schmon. Both companies are controlled by the McCormick-Patterson group of Chicago and New York, publishers of the Chicago Tribune and New York Daily News.

The expenditures are designed primarily for the acceleration of production, to improve the quality of the newsprint output, and reduce costs through improvement in plant efficiency.

Research facilities, with a view of finding additional uses for by-product alcohol, will also be extended. At Ontario Paper Co.'s plant in Thorold, Ont., alcohol has been produced in considerable quantities for the past two years. Mr. Schmon indicates that the company will pay even more attention to this phase of production in the future, even though the wartime market created by synthetic rubber manufacturing by the Polymer Corporation, owned by the Canadian government at Sarnia, Ont., may be curtailed.

Most of the amount to be spent, some $2,800,000, will be allocated to the Quebec North Shore Paper Co., whose mill at Baie Comeau, Que., is already one of the most modern plants in Eastern Canada. About $1,700,000 will be spent at Thorold.

Baie Comeau will get new winders and grinders, an improved electric drive and extension to the paper storage sheds as well as increased fresh water capacity. The changes are expected to bring about an increase of some 23,000 tons of newsprint per year. Other additional equipment to be installed at Baie Comeau will cost about $900,000 and a similar amount will be expended on tapping the newly acquired timber limits at Comeau, where new power substations, flumes and pumping stations will have to be erected.

Research facilities at Thorold will cost about $600,000, according to Mr. Schmon, while about $500,000 will be spent on hydraulic equipment, electrical installations, etc., and improved facilities for the production of sulphite pulp will cost an additional $600,000.

Total increase in production of newsprint at both plants will be 33,000 tons of newsprint, 12,000 tons of wrapping paper, 5,500 tons of pulp and 13,000 tons of groundwood. A boost in permanent payroll of 100 men is expected by these improvements, and the program will give a total of 7,270 man-months, equal to a year's work for 600 men. The work will be started as soon as equipment becomes available.

PETER FRATTINGER (left), newly appointed Plant Engineer, Pacific Mills, Ltd., Ocean Falls, B. C., is U. of B. C. grad, was Plant Engineer at Howard Smith Paper Mills and previously inspector in New York for British Purchasing Commission.

JOHN W. PARR (right) becomes Chief Industrial Engineer at Ocean Falls. U. of Toronto man, he was with Sangamo Co., Toronto, later Boeing Aircraft of Canada.

Rough Map Showing Location of Pacific Mills Operations on Moresby Island, Queen Charlottes.

FUTURE LOGGING OPERATIONS FOR NORTH AMERICA'S northwestern-most pulp and paper industry—Pacific Mills, Ltd., of Ocean Falls, B. C. This map shows site of new Sandspit camp on a gravel bar. Here probably will be future permanent headquarters as the company intends to become a bigger factor in Queen Charlotte Islands logging. Pacific Mills consumes 100 million BF a year and about half has been coming from these islands.

Price Brothers Changes

Several changes in executive personnel of Price Brothers & Co., Ltd., Quebec, have been announced by President C. H. L. Jones. Major Edward Flynn, having gone on pension, will assume such special duties as may be arranged with the president.

A. C. Price becomes vice president in charge of sales of the parent company, in addition to continuing as president of Price Brothers Sales Corp.

G. F. Layne becomes vice president in charge of all manufacturing operations of the company and its subsidiaries. He continues as chief engineer.

P. W. Sims becomes vice-president in charge of the company's finances and accounts, continuing as treasurer and controller.

M. R. Kane is confirmed as vice-president in charge of woodlands operations and all matters pertaining to company forest areas.

P. W. Good is vice-president of the new department of labor personnel and welfare.

Don Charleson Dies

Lieut. Col. Donald R. Charleson, 54, for eight years general superintendent of Grays Harbor Pulp & Paper Co., Hoquiam, Wash., died suddenly of a heart attack Aug. 25 at Wallowa Lake, Ore.

He and Mrs. Charleson were taking a vacation, his first since he had entered the army three years ago. Since leaving Hoquiam in 1936, his home had been at LaJolla, Calif. He had been stationed at the army ordnance depot at Hermiston, Ore., and was buried at Pendleton, Ore.

Taylor In Scandinavia

F. C. Taylor, formerly foreign sales representative of Rayonier Incorporated, and pioneer in marketing American dissolving and paper pulps in the Orient and South America, is visiting in Sweden and Norway.

Mr. Taylor is traveling abroad at the invitation of Scandinavian wood pulp interests and expects to remain in Europe until December.

Before Pearl Harbor, Mr. Taylor was chief of OPM's wood pulp unit and administrator of M-52, the original wood pulp distribution order.

Delay in Bag Expansion

Plans to build a $200,000 addition to the paper bag manufacturing plant of Bartram Paper Products Co., Ltd., at Vancouver, B. C., are being held in abeyance pending authority from the city authorities to purchase a lane dividing the property so that the new building can be joined to the present factory.

A "Free Enterprise" Experiment That Worked in a Big Way

There's something for company executives and labor relations experts to learn from this story which appeared in a recent issue of The High Road, published by Rice Barton Corp.:

"A boyhood friend of ours who is now a shipping and lumber magnate on the Pacific Coast, Charles L. Wheeler, tells about a modern logging camp his company constructed. It was one of the best of its kind in the world. It had garages, recreational centers, commodious quarters, spacious dining rooms with excellent food—whatever promised to please the men.

"What happened? The recreational hall became a lecture hall for radical business agents who told the workers how badly they were treated. One man who got a pre-war wage of 95 cents an hour gave a lecture every night on communism. Labor negotiations took up more of management's time than the logging operations.

"Finally a logging superintendent, a true realist, suggested that the big, luxurious camp be broken up. The logging operations were divided into dozens of small camps. A woods foreman became a contract logger. Each of those men became a proponent of free enterprise. The gangs were in business for themselves. They were engaged in a competitive game. The groups as a whole put more logs into the water than the big camps had ever dreamed of producing.

"A company engineer visited one camp and found every man missing. No one was working at logging at the time. They were all out after a bear that had shown up. No one cared. When the men got back they turned their interrupted attention to productive work and paid no heed to overtime."

Huyck Makes Millionth Blanket

F. C. Huyck & Sons, Albany, N. Y., recently manufactured its one-millionth army blanket—and in the period of manufacturing these one million blankets, forty billion pounds of paper and paperboard were manufactured on felts made by Huyck.

One in every four of the "K" Ration boxes and one in every four shipping cartons were made on their felts during the war effort.

Felt Performed Excellent War Job

The important role played during the war by the felt industry is not realized by the average person, says W. J. Parker, executive secretary of the Felt Association, Inc., 366 Madison Ave., New York.

Since 1941 hundreds of new uses have been found for wool felt, largely because of its unique properties which made it available as a substitute or alternate for scarce materials. Rubber—both the spongy and hard, tougher types—is an outstanding example, for great quantities of rubber were released for Army, Navy, lend-lease and much manufacture of war material, through this substitution of felt.

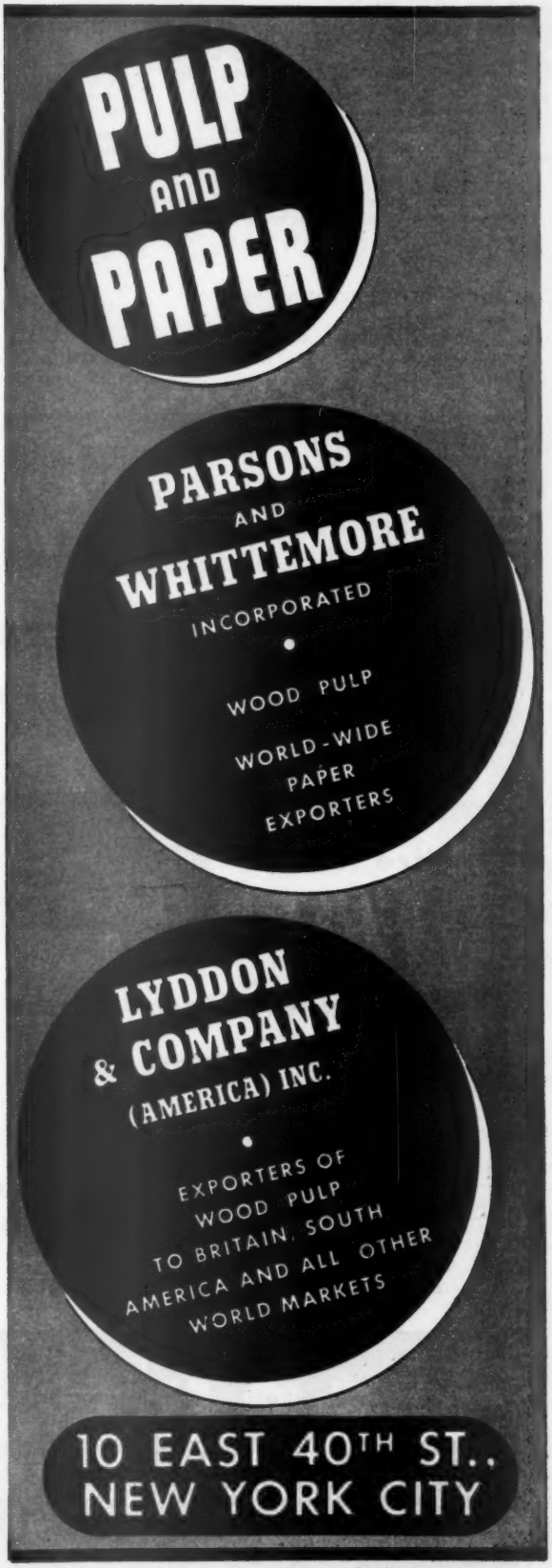
In some cases this fabric was made to serve hitherto unheard of purposes by impregnating, coating or laminating with plastics and other substances. "Rock-hard" felt wheels and bobs for grinding and polishing processes also were developed. Its use has ranged from filters in tiny hypodermic needles to cushioning in rocket bombs.

Big Power Expansion For Powell River Co.

Powell River Co. has awarded to Canadian General Electric Co. a contract for carrying out an extension of its hydro-electric power development at Lois River.

As part of a new power program estimated to cost about $500,000, Powell River Co., will have an 18000 KVA generator installed—a duplicate of the unit installed when the Lois River project was first undertaken to provide the big British Columbia pulp and paper producer with additional electricity.

Powell River Co. is still negotiating with manufacturers for water wheel and other important items to be installed in connection with this program, represening the first large-scale hydro expansion for the company since 1930, although five years ago the company spent some $1,000,000 in replacing the old log crib by building the Scanlon dam.



Coal for Sweden Delayed by Transport Lack

Shipments of coal to Sweden, on which depends the ability of the Swedish pulp industry to produce up to its capacity, are beginning slowly because of more serious transportation difficulties than had been anticipated.

Sweden is loaning 1,300 freight cars to Poland for overland transport. Poland, which increased its coal fields by acquisition of German territory, has undertaken to ship 5,000,000 tons of coal and 1,000,000 of coke by Dec. 1, 1946.

Moore Is Superintendent

Ross Moore has been appointed control superintendent of Anglo-Canadian Pulp & Paper Co at Limoilu, Que.

LeRiche Joins Yost

On September 17th, R. E. LeRiche became associated with Charles J. Yost, well known steam plant control factory representative, with offices in the Vance Building, Seattle.

Mr. LeRiche previously was manager of the Seattle office of the Minneapolis-Honeywell Regulator Co., of which the Brown Instrument Co. is the industrial division.

Rayonier Golf Winners

George Patterson defeated Arthur Boag, 4 and 3, in 18 holes for the Rayonier golf title at the Grays Harbor mill recently. George Gates, Frank Miner and Rocky Lindell were flight championship winners.

Frank Dolby, sports commissioner at the mill, plans several Turkey shoots before Thanksgiving.

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Waterproof Dip for Army Packages

A research program aimed at development of waterproof "dip" coating for paperboard cartons and other containers which will be an improvement over the wax compounds now in use has been inaugurated by the Office of The Quartermaster General, U. S. Army. The work will be conducted at the Institute of Paper Chemistry under the direction of Dr. Harry F. Lewis, and will be coordinated with the study of plastic films and coatings now being conducted at the Brooklyn Polytechnic Institute, Brooklyn, N. Y., by the Quartermaster Corps under the direction of Capt. William H. Aiken.

Letters have gone out to many manufacturers and technicians in both plastics and packaging industries inviting them to participate in the research project. Letters of invitation solicit the submission of both thermoplastic and thermosetting compounds which may have been developed, in order that they may be tested to determine if they possess the properties desired in the waterproof, fungus-resistant "dip" sought for sealing packages of food and other items sent to all parts of the world.

Persons or organizations desiring to participate in the project have been requested to communicate with Dr. Lewis.

Paper, Burlap Tarpaulin

● Substantial quantities of cotton duck will be saved by the U. S. Army through adoption of a paper burlap lamination tarpaulin. Immediate procurements of large amounts of the new material are being made. It is anticipated that savings of cotton duck will amount to millions of yards during 1945 and it will be possible to increase the supply of waterproof coverings.

Paper laminated to burlap with a special asphalt has provided satisfactory protection for the packaging of supplies shipped to all parts of the world, but this is the first time these materials have been used for continuous exposure. Tests on the paper-burlap tarpaulin indicate good durability can be obtained with materials immediately available in large quantities. The cost of the new tarpaulin will be much less than for cotton duck. Reduction in weight and bulk combine to conserve shipping space and it can be handled by two men with ease.

At request of the War Department, the Institute of Paper Chemistry has initiated a project for the study of this problem and the treatment of paper to improve its resistance to weathering.

The current specification for the new tarpaulins, which are known officially as Paulins, Burlap, Large, OQMG No. 192, provide for two combinations of materials, one having two layers or plies of paper, the other but a single sheet. The paper is an olive drab high wet-strength kraft weighing 40 pounds per ream (24x36-500) and is creped so final weight is 48 pounds per ream. The paper is sized so that it retains a high percentage of its strength when wet and the creping makes it fairly flexible. Asphalt is used as an adhesive and an additional water proofing agent, and is applied at a rate of more than 100 pounds per ream. The asphalt employed does not crack at low temperatures nor bleed at high temperatures. The burlap fabric is a standard product.

E. D. Jones Equipment For New York Mills

The St. Regis Paper Co. mill at Deferiet, N. Y., and the Taggart Corp. mills at Oswego and Carthage, N. Y., have ordered several refiners built by E. D. Jones & Sons Co. Some of this equipment is already installed.

Details of Deferiet improvements were published in the July issue of PULP & PAPER INDUSTRY.

Du Pont Rayon Chief Retires At 65

E. I. du Pont de Nemours & Co. announce the retirement of Leonard A. Yerkes, 65 years of age, general manager of the Rayon Department, who directed development of the company's synthetic fibers business from its inception in 1920. The company's plant at Buffalo, N. Y., pioneer unit in a series of Rayon Department plants in seven cities, has been named the Yerkes plant in his honor.

Named president of the Du Pont Fibersilk Company on April 16, 1920, and successively heading the Du Pont Cellophane Company and the Du Pont Rayon Company, forerunners of the Rayon Department, Mr. Yerkes has the longest record as a department head in the Du Pont Company.

Casein to Build At Springfield, Ore.

A new industry in the state of Oregon and the first large scale production of formaldehyde on the Pacific Coast will begin with the construction of a new plant at Springfield, Ore., by the Casein Co. of America, Division of the Borden Co., it is announced by W. F. Leicester, Casein Company president.

Expected to be in operation before the end of 1945, the new plant will produce one million pounds of formaldehyde monthly Mr. Leicester said. This chemical is essential in the production of synthetic resins and plastics. The plant will also produce synthetic resin adhesive in large volume for the plywood industry.

New Tool Steel Announced By Allegheny Ludlow

From 25 percent to more than 200 percent faster machinability is said to be a new tool steel announced recently by the Allegheny Ludlum Steel Corp., Brackenridge, Pa.

The new product, identified as "Dunkirk EZ," is a free-machining steel and is described as being "outside the usual tool steel specifications, with extraordinary possibilities in the fields of cold work applications and tool steel machined parts, such as dies, gauges, forming rolls, bushings, liners, and bodies for multiple-edge tipped tools."

"Dunkirk EZ" will harden to about 65 Rockwell C when oil quenched from 1450-1550° F.; may be tempered up to 500° F. without softening under 60 Rockwell C; is rather deep-hardening, which assures proper hardness even in large sections; undergoes very slight dimentional change in heat treatment; and possesses higher impact and transverse rupture strength than most other oil-hardening tool steels.

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Recent Plastics Developments Of Interest to the Pulp and Paper Industry

By Dr. J. J. PYLE
General Electric Company

The accompanying article is part of a paper delivered by Dr. Pyle at a recent Chicago conference of the Society of Plastics Industry. In it he discusses resins for papers, new cellulose derivatives which are made from wood pulp and lignin.

"It would be rather remarkable if one of the by-products of the growth of the plastics industry was the modification of the long-established procedures for making pulp," he said, in visualizing an industry producing both pulp and usable lignin products.

● The use of resins to increase the wet tensile strength of papers offers an exceptionally large outlet for these resins when the capacity of the paper-making industry is considered. Anyone who has tried to carry a parcel of groceries home in the rain, only to have the bag split asunder, can certainly appreciate the value, both immediate and potential, of this development.

Phenol-formaldehyde resins have been used, but difficulties were encountered with solubility, slow cure, and the yellow color of the resin. While approximately the same difficulties were encountered with alkyd resins, the urea-formaldehyde and melamine-formaldehyde resins appear to be naturals for the application.

Using these resins, wet tensile strengths have been obtained up to 50-60 per cent (and higher) of the dry tensile strengths, which in turn have been increased approximately 15 per cent. Papers so treated have been used for blueprints, maps and charts, thin tissue, toweling, and impregnation.

Here, then, we have a place where the use of a plastics material has so improved the properties of the original material that new markets (particularly in the realm of packaging) immediately become available to the combination. In this respect the series of events is similar to an autocatalytic chemical reaction in which the products of the reaction catalyze the reaction and accelerate the consumption of the original materials.

Many other applications could be discussed, such as the use of polyvinyl alcohol, urea-formaldehyde resins, and Vinylite for printing (offering the advantages of greater durability, lower cost, light weight, freedom from corrosion, etc.); the use of pulp preforms to obtain articles with mechanical properties between those of molded and laminated plastics, the post-forming of laminates, the tremendous increase in the production of synthetic adhesives, synthetic fibers, and so on.

New Types of Resins

● New types of resins developed in recent years and which have aroused considerable interest, can be grouped broadly under the names "solventless varnishes" or "liquid resins." These include the allyl resins, both ethers and esters, the unsaturated alkyd-monomer (usually styrene) combinations, and by stretching the point slightly, liquid phenolic resins. All of these are used widely in low pressure laminating, and the first two have found considerable utility for molding under contact pressures.

The first two cure with the aid of organic peroxide catalysts yielding in general clear, cast resins which are transparent, hard, resistant to heat, aging and solvents, and which possess good mechanical properties, abrasion resistance, and in certain combinations, excellent electrical properties.

The increasing importance of low-pressure molding will have a decided bearing upon the postwar plastics picture. In general the investment for molds and tools is comparatively low, and the technics involved are not complicated. The variety of shapes and sizes appears to be almost unlimited, and the molded pieces have mechanical properties approaching regular laminates.

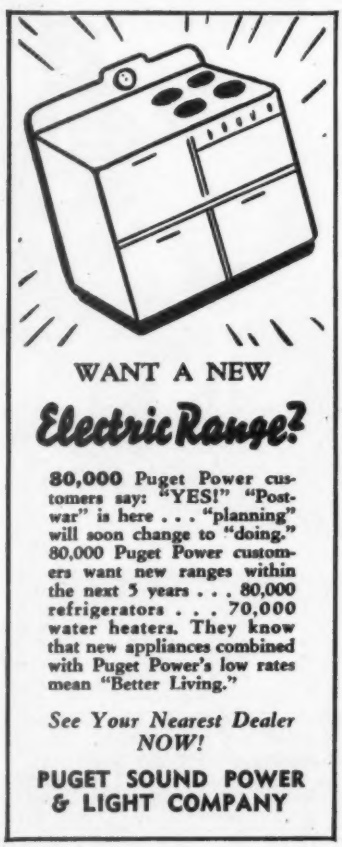
It is true that parts have to be preformed fairly accurately, but certain new developments under way may modify this handicap considerably. It is to to be expected that a great many concerns will move into this field now that the war is over, and such companies as furniture manufacturers will undoubtedly find the method of great interest.

The chief competition will undoubtedly come, as far as relatively simple shapes are concerned, from the post-forming of flat laminates. In both cases, however, it would appear economical for the fabricator of the parts to make them himself, thereby greatly increasing the number of plastics manufacturers and putting the industry on an even firmer foundation. It is also true that plastics materials are highly infectious in that a person who has worked with them for any reasonable period of time seldom escapes completely from their spell.

Cellulose Derivatives

● A number of developments in the cellulose derivative field, either current or pending, should increase the consumption of these valuable products. The low temperature characteristics of ethyl cellulose, already well known, make it an outstanding contender where such properties are paramount.

The use of high acetyl cellulose acetate has shown marked improvement in heat and humidity resistance, and previous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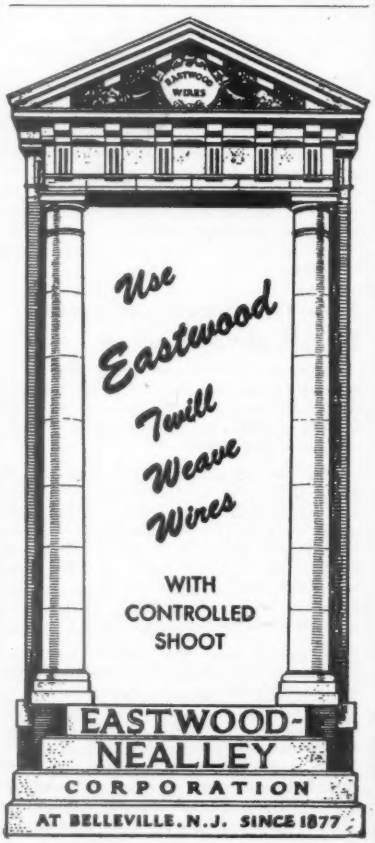


limitations upon the applicability of this material will have to be modified. It has been reported that cellulose acetate has been prepared with the crystal clarity of methyl methacrylates. If this can be done economically on a large scale, the acrylates will have to look to their laurels.

Many other cellulose derivatives, such as methl cellulose, glycollic ethers, benzyl cellulose, and others are in various stages of development and evaluation, with promises of many new and interesting properties and possible applications. Despite the number of years that cellulose derivatives have been used in plastics, it would appear that the real development and exploitation are only getting under way.

Lignin

● Perhaps no paper on plastics materials would be complete without a few words about lignin. We have heard a great deal in the past about this material, and undoubtedly will hear a great deal more in the future, especially when low cost compounds are required.

The results of our own work, which is by no means completed, tend to indicate that lignin is an expensive substitute for wood flour. While it is true that a 40:60 resin-wood flour combination can be replaced by a 30:10:60 resin-lignin-wood flour combination in many applications, it is also generally true that a 30:70 resin-wood flour mix will do practically all of the things the 30:10:60 combination will do. The reason the 30:70 mix is not generally used is that it is too critical for the usual production methods and the molding of intricate parts.

The use of lignin in laminates, where there may be mechanical properties to spare, would appear to be a natural, but even in that application after-shrinkage of the sheets some days after removal from the press and during fabrication has suggested considerable caution.

It is generally felt by those who have worked with lignin products that lignin would be more interesting in the manufacture of plastic materials if it were available in a form more like that in which it exists in the wood. However, normal pulping procedures, whether they be sulphite or sulphate, are so drastic that the small, reactive molecules that exist in wood are resinified or cured, and the product isolated is about as much as a ground-up cured phenolic resin.

It has been the writer's contention for some time that if widespread use of lignin is to be achieved, certain modifications of pulping procedures will be necessary to produce two useful products, pulp and usable lignin products instead of the present products, pulp and waste. It would be rather remarkable if one of the by-products of the growth of the plastics industry was the modification of the long-established procedures for making pulp.

Summary

● Recent developments which can be expected to have profound effect upon the scope and the direction of emphasis of the plastics industry can be grouped under three headings:

(a) Increased production (and reduced cost);

(b) New applications (which have opened up new markets);

(c) New and improved materials.

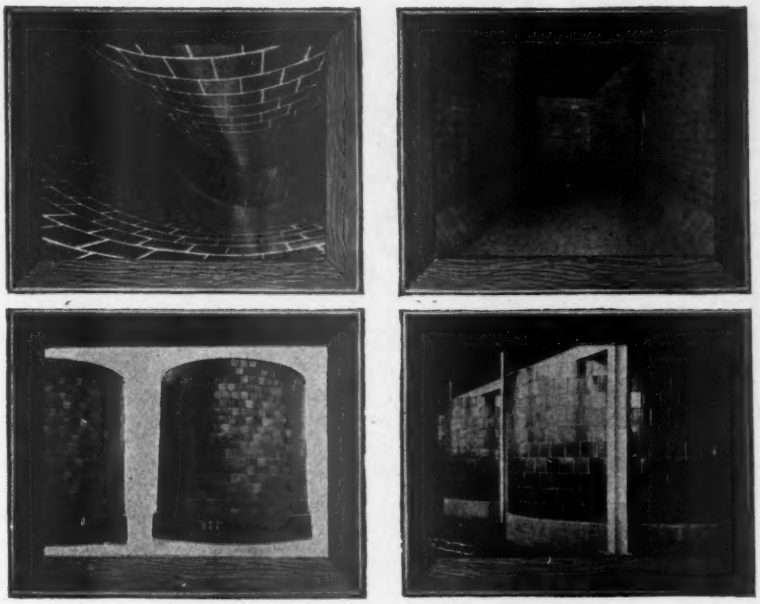
The effect of these three factors may be tied together very well by considering the three sides of a right-angled triangle. One of the sides may represent the reciprocal of the price, the other the characteristics available, and the hypotenuse may represent possible applications.

The total plastics business is represented by the area of the triangle. As the price is reduced the reciprocal increases and the hypotenuse or applications increases as does the total area or business.

Just as the reciprocal of a number increases at an accelerating rate per unit change as the number gets smaller, so a drop in price of 2 cents per pound at 20 cents per pound is often much more important than a reduction of 5 cents per pound at 50 cents per pound. In a similar manner, as new and improved plastics materials are developed, the range of characteristics available increases, and again the hypotenuse or possible applications is increased.

Under wartime conditions the demand for ever-improved characteristics accelerated the development of new and improved materials without very much emphasis upon cost. Now that the war is over, whether there is a plastics boom or not, greater emphasis will again be placed upon costs with a corresponding increase in that side of the triangle. Undoubtedly plastics are going to encounter more and more competition from other materials, and although this matter is too complicated and extended to attempt a discussion at this point, there is no competitive material or combination of competitive materials which exhibits all of the myriad of characteristics that plastics do.

All in all it is rather difficult to view the future of plastics with anything but confidence and optimism although it must be admitted that a little more conservative optimism than has been exhibited at various times in the past would certainly be more to the point.



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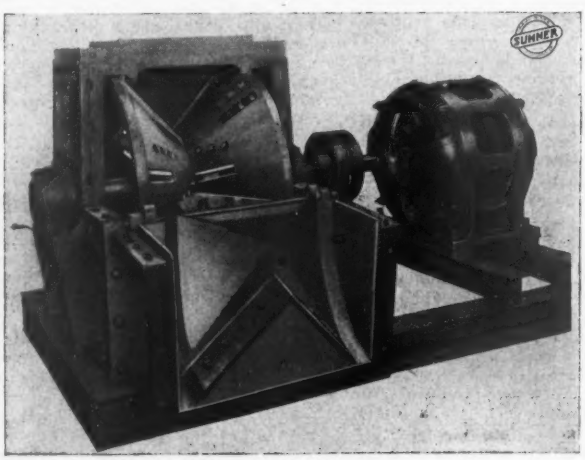

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